ARCHITECTURE

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Rebuild America

By ANDREW J. EKEN

IT seems typical and characteristic of us as a people that we must ever have a slogan for what we do, whether it be "Making the world safe for Democracy" or "Rebuilding America." No one acquainted with the facts and alive to the times can doubt that we will Rebuild America insofar as our housing is concerned, but few realize that, large as the progress of low-cost housing may ultimately develop, we shall in all probability have a by-product which will be even larger and more far reaching in its scope and effect.

Private corporations had already pointed the way in low-cost housing previous to government entry in the field, but both government and people must be educated to the need of outright subsidy before we have real low-cost housing on any effective scale or a program which will benefit the mass in the lower-income brackets. Few doubt that this is the ultimate solution or that it will now be long delayed.

At the present time there are nearing completion several projects by limited-dividend corporations, and a number of others have been started under governmental agencies, and while none of them reaches the groups who so sorely need relief, they indicate the way and will be a starting point for what will shortly be done under some form of subsidy.

As in anything in which government injects itself, progress will be slow, but there can be no doubt of the large volume of building required by this need, or that it will be done.

Greater than this in volume and cost must be the program of rebuilding ultimately forced in housing of all kinds, for people in every income bracket, by their education of what constitutes proper living quarters through the medium of low-cost housing now being planned and built.

It has been customary in the past in even our finest co-operative Park Avenue apartments to cover up to 75 per cent of the site, and even then to build to almost unlimited height. In the best of apartments effective cross circulation is practically unknown and sunlight is enjoyed for but a brief part of the day.

None of the apartments I know of in any class is to be compared—as healthful and comfortable living quarters—with some of those now being built and finished for low-cost housing, with ground coverage below 33 per cent and with an apartment extending entirely through a narrow building, thereby allowing as great cross circulation of air as in any privately owned single-occupancy home. Not only is this so, but, due to the low coverage of ground, the separation of units is, generally speaking, much greater in the courts of the units than the width of streets; and so, not only is there greater ventilation and sunshine, but greater privacy of living.

It is interesting to note that the man of low or moderate income, building on the usual twenty or twenty-five foot lot—or even fifty-foot lot—has not to this date secured comfortable quarters in terms of light and air or privacy.

It is impossible to believe that this great demonstration will not ultimately register with all classes, or to believe that when the knowledge of it becomes general, people paying larger rents will be content with apartments incomparable with those provided for the low-income group. I have no hesitancy in predicting that our better-class apartments of today will be shortly so obsolete as to insure a tremendous program of Rebuilding America.

Landscaping the

By Marjori

THE landscape development of a housing project differs from that of a private estate or public park in the following respects:

Recreational areas are of greater importance than ornamental areas.

Traffic circulation is secondary to the safety of pedestrians, particularly of children.

The design and selection of plant materials are limited to those varieties which are least expensive and which withstand city conditions under a minimum amount of care.

Construction costs must be carefully considered in relation to maintenance costs.

Whereas in parks and private estates the layout is usually adapted to existing contours and soil conditions, on housing projects, large-scale building operations destroy the natural character of the land, and topsoil has to be stripped or purchased and re-established at considerable expense.

In the low-cost municipal housing development of Kottby, near Helsingfors, Finland, street grades and the foundations of buildings conform to the natural contours of the land, so that existing trees and topsoil have been preserved intact. Tenants are allowed to plant vegetables and flowers in the apartment courts. Underground drainage is omitted, and community wash houses and lavatories are located in the centers of the blocks. Walks are surfaced with gravel instead of concrete. Hence the problem of landscape development has been reduced to the planting of street trees and hedges, the surfacing of paths, and development of sand-clay recreation areas.

Plant growth and topsoil have also been preserved in the garden suburbs of Stockholm, Sweden, by a skillful adaptation of general layout to existing topography, and also by the erection of sectional houses which are designed by the city architects according to traditional styles, and constructed in factories during the winter months when building trades have a long slack season. Land too rugged for house lots is reserved for public parks, through which a secondary system of circulation is developed for bicycle riding. Individual house lots are protected by fences, and it is most refreshing to find a luxuriant growth of fruits, flowers, and vegetables, instead of the conventional front lawn. There is usually a dining terrace or arbor, for the Swedes appreciate the possibilities of living outdoors during their short summers.

In Sporilov, a low-cost housing development near Prague, Czechoslovakia, landscape development has been reduced to interior block paths, low fences, and young street trees. Since there was little or no plant growth to start with, and the householders are not particularly interested in working their gardens, the general effect is barren and disappointing.

A bank held by a ground cover of honeysuckle, in the

In our own country no such low-cost landscape work would be tolerated. The type of work demanded by the sales department of an American housing project in Greater New York, exclusive of walks and drains, amounts to $7000 per acre on open areas, and at least $8000 per acre for closed courts. To undercut these figures, it would be necessary to substitute cheap surfacings for lawns, and to use only such foolproof plants as ailanthus for shade, Boston ivy for wall decoration, and honeysuckle to hold banks. So far, this type of thing has never been attempted in the United States.

Tree holes and trench for hedge in a clay subsoil

Housing Project

Sewell Cautley

Phipps Garden Apartments, Long Island City, N. Y.

The purchase price of a plant must be considered in relation to its cost when installed. For example, to the cost of a $6 tree (planted in a minimum allowance of a yard and a half of topsoil), there must be added $2 for excavation, $4 for topsoil delivered and spread, and $2 for labor of planting, staking, mulching, and fertilizing, making a total of $14 for the tree. A sixty-cent shrub costs $1.60 installed, and a thirty-cent hedge plant, $.90.

Along streets and in open areas, these figures may be slightly reduced, but in closed courts, all materials, including excavation, topsoil, and plants, must be wheeled in or out by hand at the prevailing rate of wages.*

Trees and hedges planted to border an interior court walk

Since the purchase price of a plant is only a fraction of its cost when installed, the tendency in budgeting is to reduce topsoil to a minimum. This seems to be a dangerous practice, in view of the handicaps to growth encountered in city soot and dust, possible lack of care, and probable lack of sufficient water.

A minimum amount of topsoil means planting each shrub in a small pot hole. The initial cost is greatly reduced, but maintenance costs increase when growth is checked as the plants exhaust the soil, and heavy applications of fertilizer are needed to keep them alive. Another drawback is that since the spread of the foliage is greater than the diameter of the pot hole, rainfall seldom seeps through to the roots as it does in a shrub bed, and each plant must depend on individual watering. For this reason planting in trenches is safer than planting in separate pot holes, since water tends to run from one end of a trench to the other.

This problem of providing for an adequate amount of topsoil is one that demands serious consideration in regions where the subsoil consists of heavy clay or rubbish left from building operations.

Watering becomes a major problem of maintenance, since the efficiency of surface drainage, surrounding the buildings, rapidly carries off the natural rainfall.

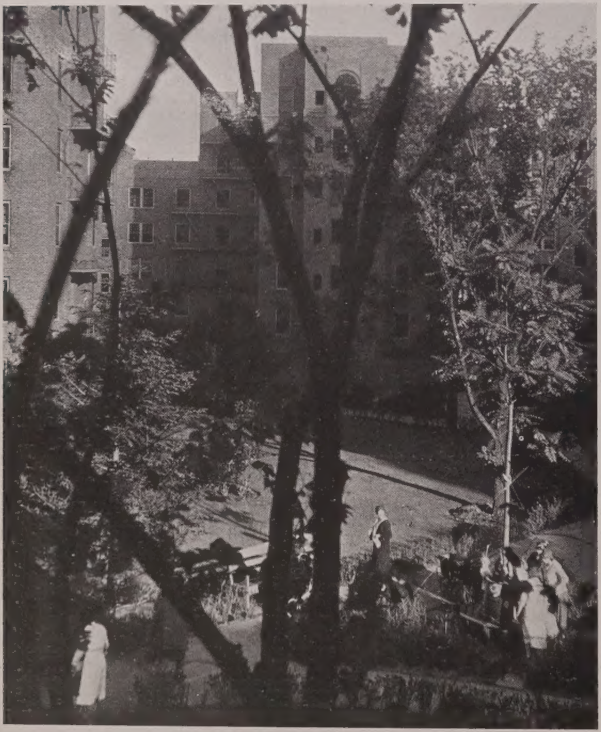
In the great court of the Phipps Garden Apartments, Long Island City, an artesian well was installed, with electric pump and complete underground sprinkling system. Although this involved considerable initial expense, it forestalls heavy maintenance charges of watering by hand, and insures an adequate supply of water during droughts, when the use of city water for sprinkling is often prohibited. An independent watering system should therefore be considered as insurance on the owner's investment.

Another wise precaution is a year's guarantee of replacement of plant stock by the contractor. Actual loss of stock which was covered by this guarantee for the planting of the Phipps Garden Apartments amounted to 5 per cent of the cost of the plants.

At the Hillside project in the Bronx, where the same type of hardy, wholesale stock has been planted, with guarantee of replacement, the largest item in the maintenance budget will undoubtedly be that of watering by hand. A special arrangement is being made to employ laborers from 12.30 noon until 8.30 P.M. so that watering may be done when foliage is not exposed to the heat of the sun. The Superintendent of Grounds is keeping cost records of labor and materials, classified according to such items

* The question of unit prices for topsoil and excavation has already been discussed in the August issue of the *American City Magazine*.

The typical subsoil that large-scale building operations bequeath to the landscape architect



The refreshment offered by green leaves outside a city window. Phipps Garden Apartments

as trees, shrubbery, lawns, ground covers, and surfacings.

The upkeep of the courtyard and street planting of the Phipps Garden Apartments amounts to a charge of $12.50 per family per year. This includes the full-time services of an expert gardener, with part-time assistants; all the usual routine care of trees, shrubs, vines, and lawns; general clean-up of the grounds, and such extra items as the growing of flowers from seed and the spraying of six large elm trees twice a year by a tree company on a contract basis.

For parks and private estates, landscape development can be undertaken over a period of years. For housing projects, the grounds must be ready for intensive use immediately on completion of the buildings.

In spite of the sales value of landscape work, which comprises 60 per cent of the land, few corporations provide adequate budgets to cover such an area—regardless of design or esthetic effect.

The landscape design of a housing project is controlled by pedestrian circulation along walks to apartment entrances. These walks may be shaded by trees. Lawn panels and terraces may be protected by flowering hedges. Wall spaces may be decorated by espaliered shrubs and trees for immediate effect, to offset the slow growth of vines.

In order to reduce maintenance to a minimum, banks and small irregular areas which are difficult and expensive to cut by hand, should be planted with ground cover instead of grass. Although the initial cost of establishing ground covers is more than double that of establishing lawns, the upkeep is very much less. Wherever

Preparing subsoil for lawns

Play space for children, Hillside Homes, surfaced with gravel possible, ornamental lawns should be designed as open panels with straight edges to facilitate mowing. They may be protected against trespass by low hedges, planted in trenches, slightly below the grade of the sidewalks to conserve water, especially rainfall.

Spanish patio gardening might well serve as inspiration for apartment courtyards.

Symmetrical specimen plants, suitable for private-estate work, cannot be considered within the range of low-cost housing developments.

Evergreens, which cost two or three times as much as deciduous stock, must be used sparingly. They make the best showing when concentrated at focal points.

Hence the problem in plant design is largely one of contrast or harmony in plant forms and foliage textures, in so far as the budget will permit.*

It is interesting to note that trees of small size can produce any effect whatever in relation to four-story apartment buildings. At Hillside, thanks to the living-room doors of ground-floor apartments, and a decorative horizontal band of brick between the first and second stories, a feeling of intimacy is produced in the garden courts, so that the newly planted trees of two- and three-inch caliper are not painfully out of scale.

Areas which receive intensive use should be surfaced with durable materials, selected for wearing qualities and for color effects. A playground which is to be flooded for skating in the winter, may consist of a mixture of sand and clay over a cinder base, and an application of calcium chloride on the surface to lay the dust.

Play spaces for small children can be sur-

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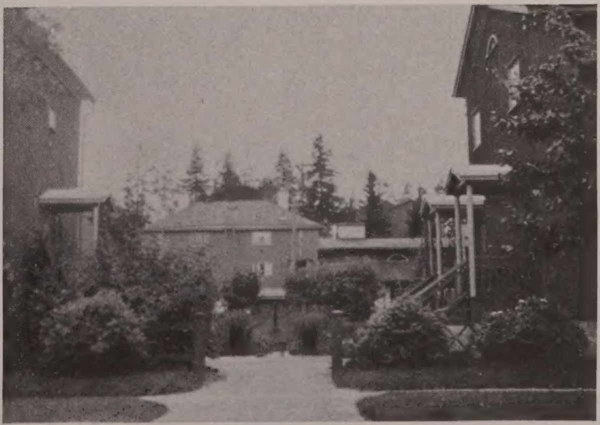
* For classified plant lists suitable for city conditions, see the author's *Garden Design*, Dodd, Mead & Company, 1935.

In Sp̆roilov, Prague, Czechoslovakia, the landscape development consists of gravel paths, wooden fences, and small trees

Trees and hedges create a setting for the buildings in the municipal development of Kottby, Helsingfors, Finland

Tenants plant vegetables and flowers in the courts at Kottby, Finland



Community wash houses and lavatories in centers of blocks, Kottby faced with clean screened gravel, in which children delight to play and dig.

Terraces, which in an expensive development would be finished with flagstone or brick, may be developed with tennis-court surfacings —bright red brick dust or dull red shale, laid with a satisfactory binder. Almost a third of the grounds of a low-cost development may be treated with surfacing to advantage instead of grass, since the upkeep of the former consists of occasional weeding, raking, and rolling, as compared with the continuous watering, mowing, fertilizing, weeding, and rolling of lawns.

A distinctive innovation at Hillside is the private terrace provided for each ground-floor apartment. It is protected from the public walk by a flowering hedge, and may be furnished by the residents with garden chairs, tables, and gay umbrellas. Tenants are permitted to plant bulbs and flowers at the base of the terrace hedge, while for children, small plots have been incorporated in the plan of a formal garden.

Also at Hillside, community rooms, tenants' workshops, an outdoor theatre, a nursery school, wading-pools, and a large playground, well equipped with shelter house and recreation leader, offer opportunities for diversion and recreation to residents of all ages.

In addition to these central features, each ribbon apartment building encloses a garden court. Small play spaces in each court afford freedom and independence to children of pre-school age, who can be watched by busy mothers from their apartment windows.

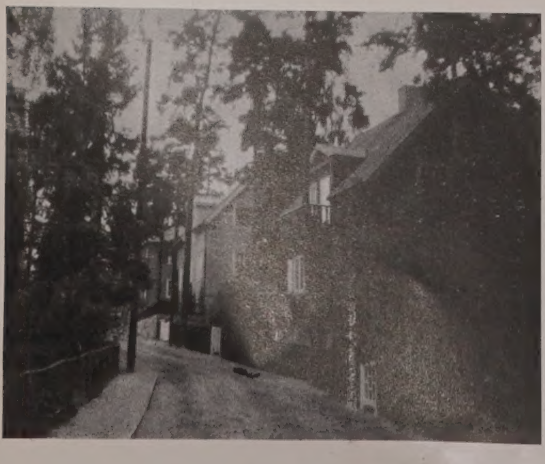
The purpose of the modern housing development, on which buildings occupy only 40 per cent of the land, is to provide the maximum amount of open space for the use and enjoyment of its residents. The remaining 60 per cent of the land should not only afford an appropriate setting for the buildings, but also provide a ready means of escape from the noise, dust and confusion of the city, and offer an opportunity to relax out of doors or to engage in wholesome exercise, which, until recently has been possible only for those city dwellers who are fortunate enough to live near public parks.

In certain sections of our cities householders have thrown their small lots into a community garden, with a central walk or lawn, but the gridiron system of streets encircles each block with traffic hazards for children as well as for adults. It is impossible to establish community life and recreation on so small a scale. Hence city planners have developed the superblock—an area large enough to contain houses or apartments, a local shopping center, community recreation facilities, and a grammar school. The superblock may be adjacent to highways or surrounded by them, but within its boundaries a complete system of pedestrian circulation affords safety and freedom for growing children.

Clarence S. Stein, architect and city planner, has developed a pattern for community living that may well serve as a basis for any developments of the future. Spaces could be larger, materials more costly, but the intrinsic value of the pattern lies in its provisions for the amenities of life as well as for the physical requirements.

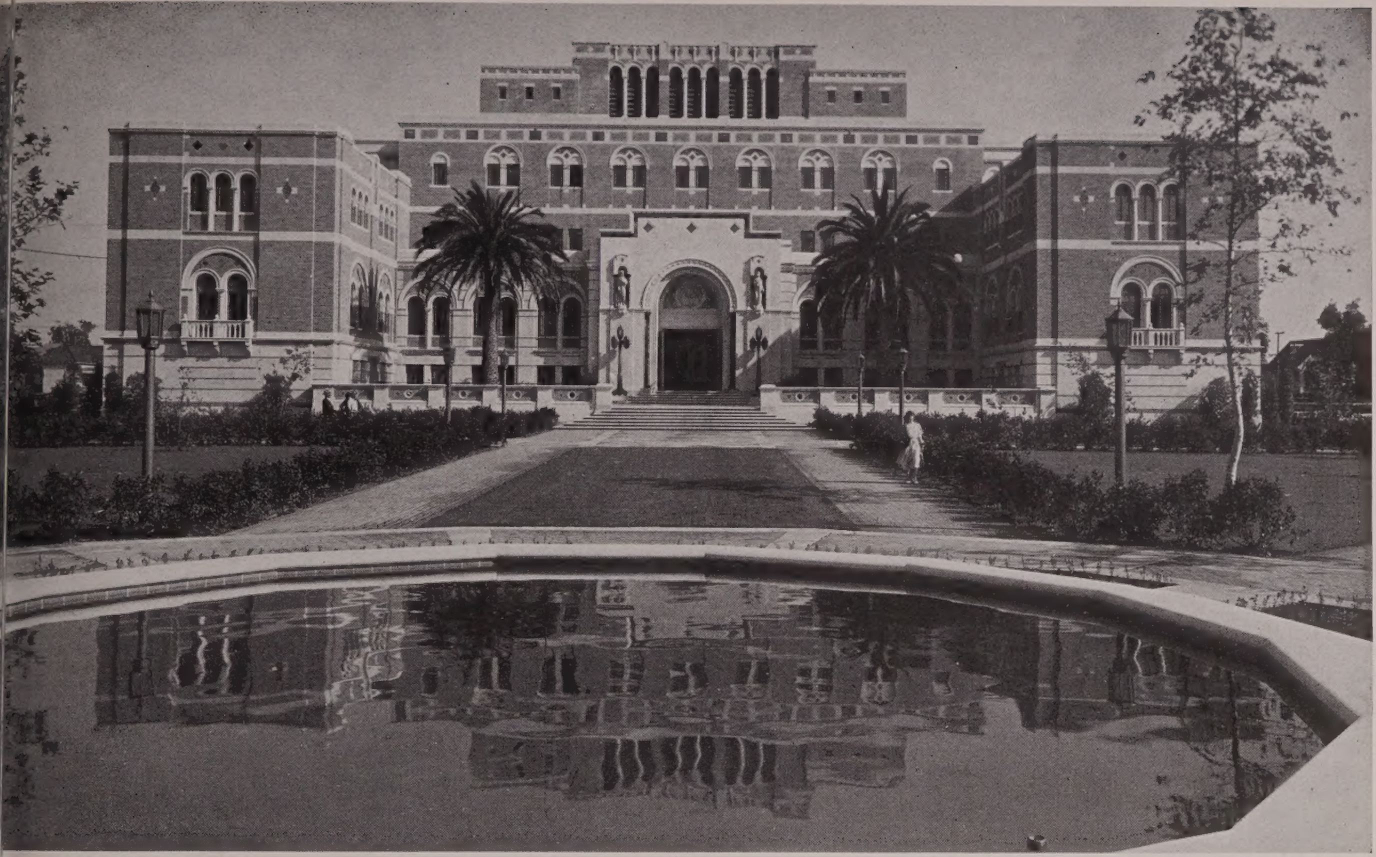
The garden city of Radburn, N. J., and the ribbon apartments of Hillside Homes in the Bronx, New York, are outstanding examples of his work.

In garden suburbs of Stockholm, land too rugged for plots is reserved for parks



Plant growth and topsoil have been preserved in the Stockholm garden suburbs

Sectional houses are designed by the city architects in this suburb of Stockholm

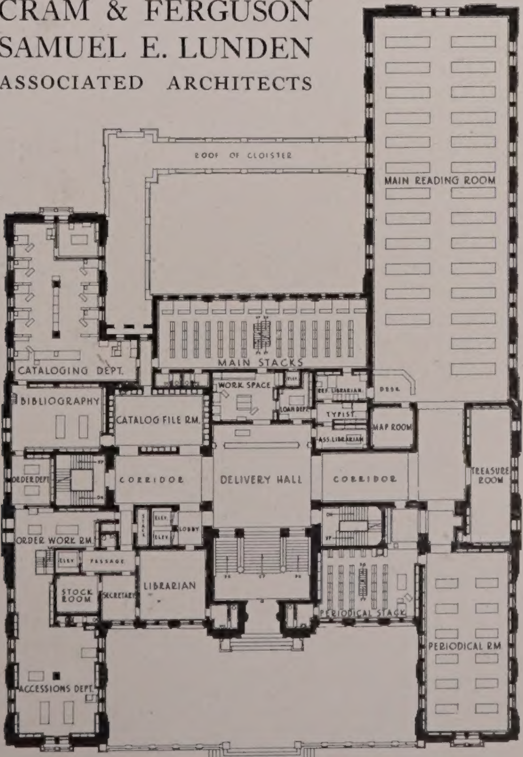


Mott Studios

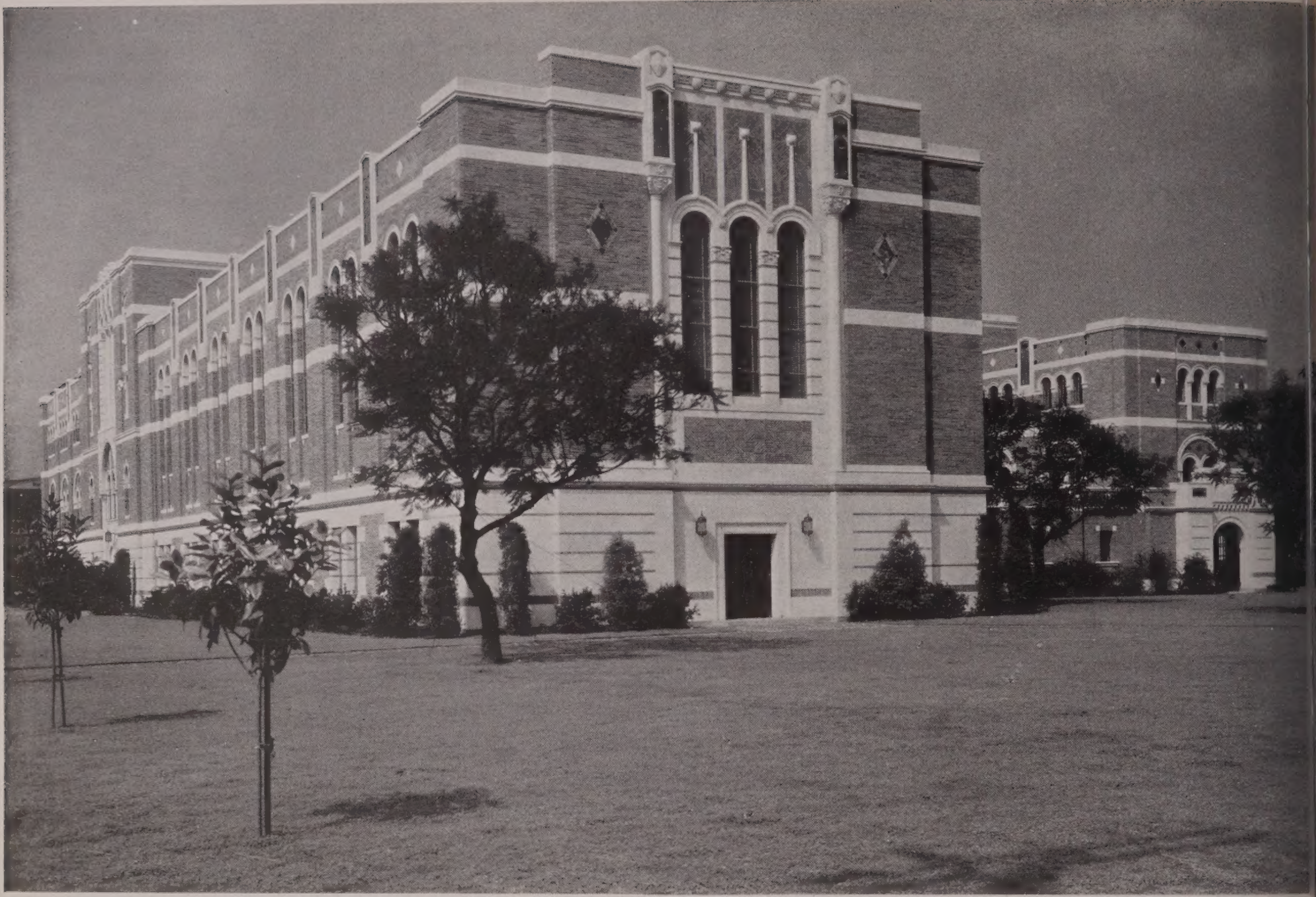
The Edward L. Doheny, Jr., Memorial Library

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

CRAM & FERGUSON
SAMUEL E. LUNDEN
ASSOCIATED ARCHITECTS

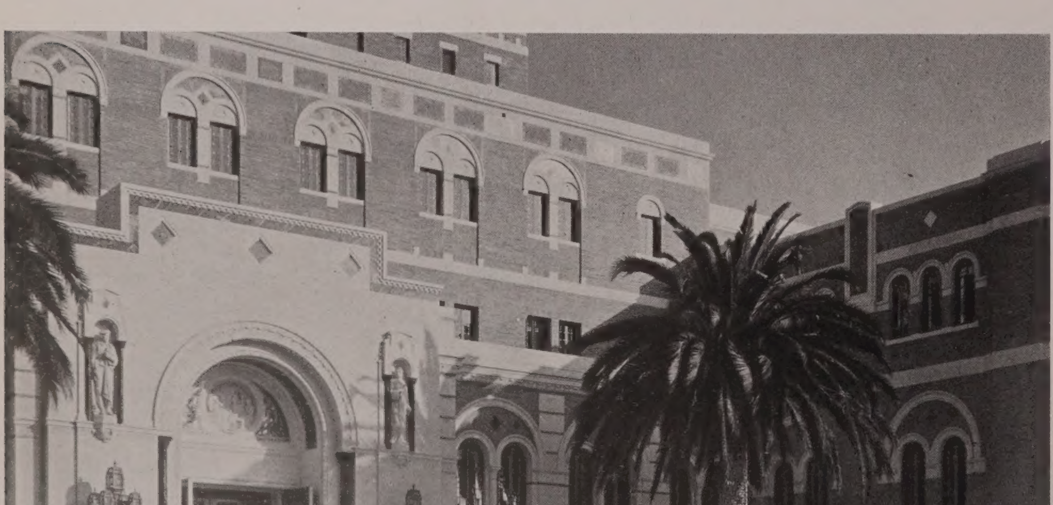


Brick for the exterior is a special Roman brick of salmon color; the stone trim and the sculpture is of Cordova Cream Texas limestone; steps are of gray granite; walks and paved terraces of flagstones. Various marbles have been used in the colonnettes, panels, spandrels, etc.—among them: Levanto, Belgian Black, Tinos III, Campan Melangé Rouge, and Botticino



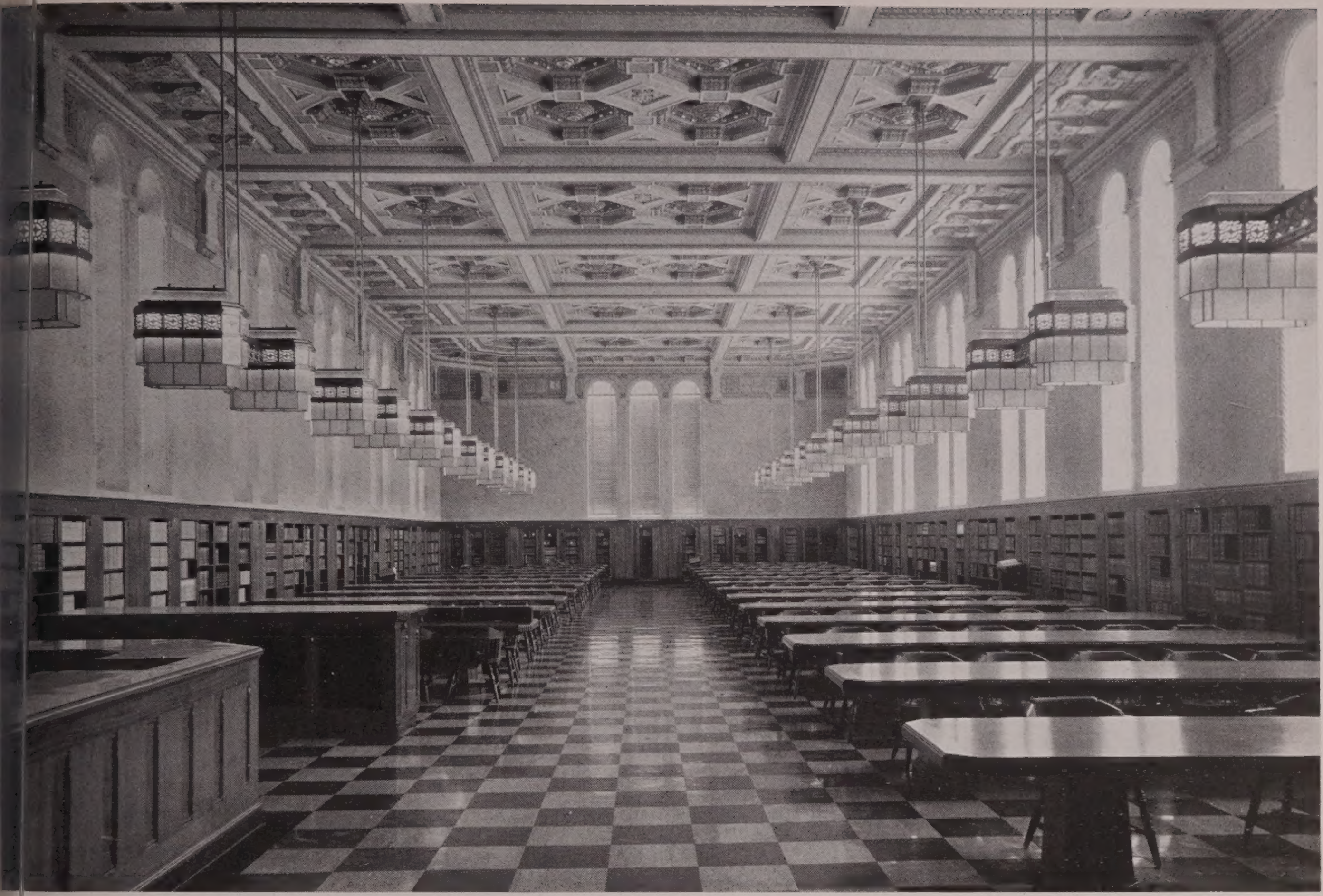
Padilla Studios

As may be seen in the plan on the previous page, the main reading-room occupies the whole area of the wing shown in the foreground



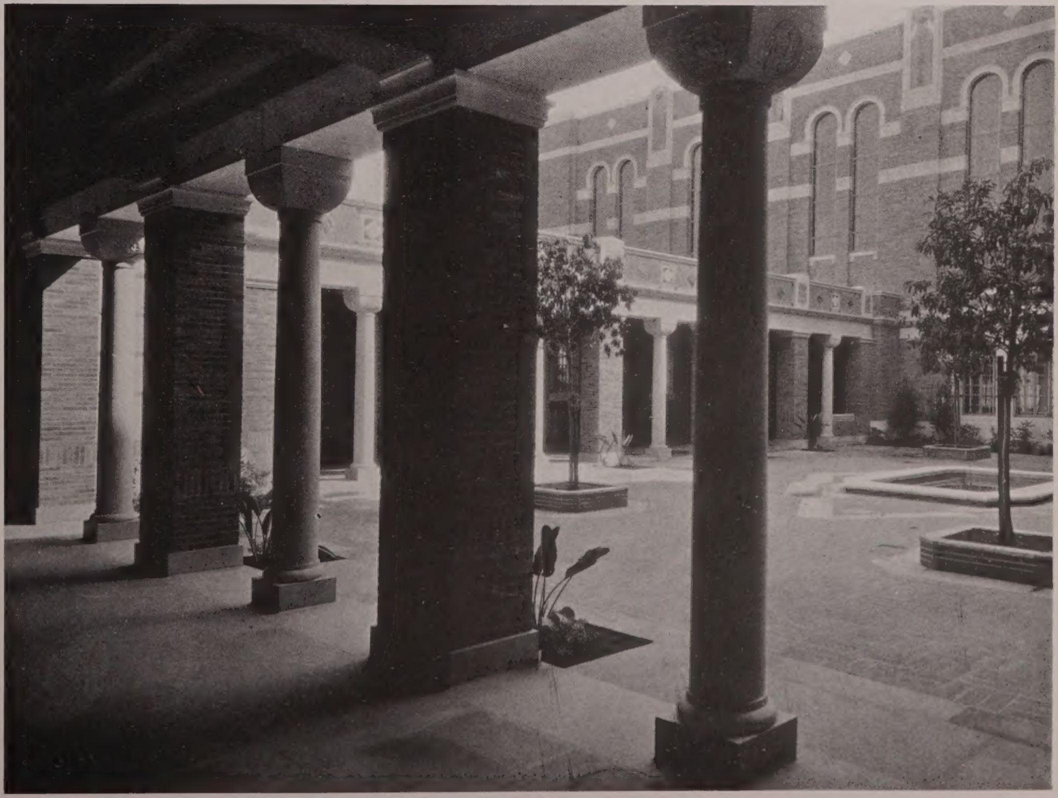
Mott Studios

A detail of the main entrance and its terrace. Windows have steel sash and frames. Doors and their frames are of bronze in some cases, of teak in others



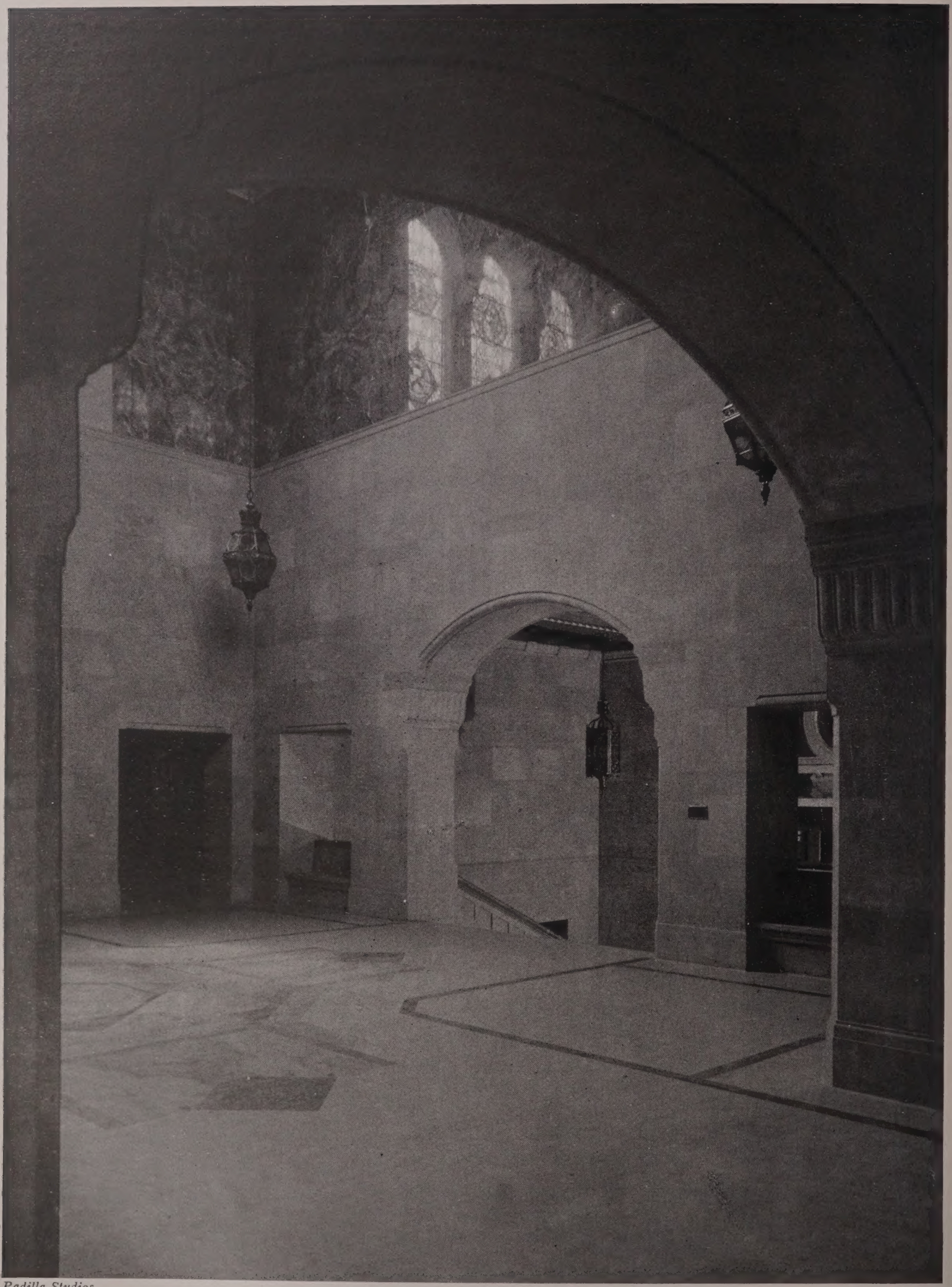
Keystone Photo Service

The main reading-room. Above the cases, walls and ceiling are painted, with various moldings picked out in gold. There is also some running pattern in color on chamfers and moldings



Padilla Studios

In keeping with the round-arched Southern or Mediterranean type of the architecture, and with Californian traditions, there is a cloister-enclosed patio opening upon a level below the main floor



Padilla Studios

The main delivery hall, looking toward the entrance stairs. Marbles used to face interior walls are: Sienna Travertine, Vaurion, Bongard, Travertine Fleuri, and Travertine d'Aquitine; for floors, Hauteville, Rojo Alicante and Cardiff Green

Architecture—Today and Tomorrow

By *Alfred Granger, F.A.I.A.*

AT a recent meeting of the Washington Chapter of the American Institute of Architects, the subject under discussion was, "What Future Has the Architect in America?"

About forty men were present at this meeting, and at first it seemed as if we were attending the funeral of the architectural profession. A group of the younger men were the first to be heard from, and the depression had gotten them. They were literally sunk in gloom, and saw no light ahead. After listening to several tales of woe, the oldest man present rose to his feet and asked if he might say a word. All turned to him, expecting, from the expressions on their faces, to hear the final obsequies of the profession upon which they had, a few years previously, built their hopes of an honorable livelihood. To their complete surprise his first words were: "Never before has the American architect faced so brilliant and fascinating a future." He then told how during the years of the depression inventive genius had not been idle; new methods of construction had been evolved, new materials discovered, creating new demands for a larger life among all peoples. A study of social conditions in this country makes it plain that most of our American cities must be rebuilt; housing is only one line of building activity.

As soon as the Pilgrim Fathers had built cabins for their families, they began to build churches and schools, for education is the bedrock of American civilization. We have hundreds of thousands of schools and colleges which are now awakening to the fact that the idea of educators that the purpose of college education is to teach a man or a woman how to make a living "is the bunk"; such training produces no culture and is no education.

All over the land our teachers and professors and even college presidents are shouting the old, old fact that the object of education is to *teach one how to live.*

The fundamental principle of the New Deal is to make it possible for the American people to live and to live abundantly in a land of plenty. Our schools, our colleges and all our other eleemosynary institutions will have to be rebuilt, so that they may tell the story of an enlightened civilization. This rebuilding will be done by the architects of today and tomorrow.

Of course, such projects as I have just mentioned will have to be financed by private initiative, but there is also another field of work offering tremendous opportunities to the intelligent and capable architect. The value of the architect as an important factor in the developing of the New Deal is being shown in the Treasury Department in Washington, where the Secretary of the Treasury, himself a student of architecture, has assembled a group of architects from various sections of the country who are designing and planning post-offices and other buildings with the utmost speed, economy and efficiency in order to get the great Public Works Program under way.

Never before has the Government of the United States been brought to such a realization of the value of architectural training. When our schools teach architecture as a living force in the nation's life, and not as a thing of the past, our young men and women who take up that study will realize how important is their part in building up a real culture in this land, and the architecture which they will create will clearly express that culture.

To meet the demands of the future which faces us, we must have men trained to use the new materials and new methods of construction which have been discovered in recent years. This means many changes in our methods of architectural education, and our leading architectural schools are intelligently considering these problems and changing their curricula.

All this is significant and hopeful, and shows that the architectural profession, although worse hit than any other in the past five years, instead of being downed by the depression, is actively and intelligently planning for the future, with a keenness of vision akin to that of the founders of the profession in this nation.

Mr. Matlack Price has recently written a thought-producing article, published in the December, 1934, number of ARCHITECTURE, entitled "A Challenge to Architectural Education," in which he speaks of "new ideas in the study of *style-sources*" (the italics are mine). That, I think, is the one thing the student must be taught if he is to be emotionally stirred, so that he can *feel* that architecture is a great life force depicting and recording the story of the human race.

Looked at in this light the monuments of the past become alive to the student of today. He looks at them not as something to be copied but as things to be reverently regarded, to be loved and to be studied, so that he, a citizen of the twentieth century, may understand how the men of the first or the tenth or the fifteenth century lived and loved and carried on the great tradition.

From the temples of Greece he learns that the Greeks loved order and dignity and simplicity; from their triumphal arches and columns, their great circuses and baths, that the Romans were conquerors, brutal in their sports and addicted to luxury; from the cathedrals of France and England, he is able to understand the mysticism and poetry, as well as the poverty and narrowness of the mediæval ages.

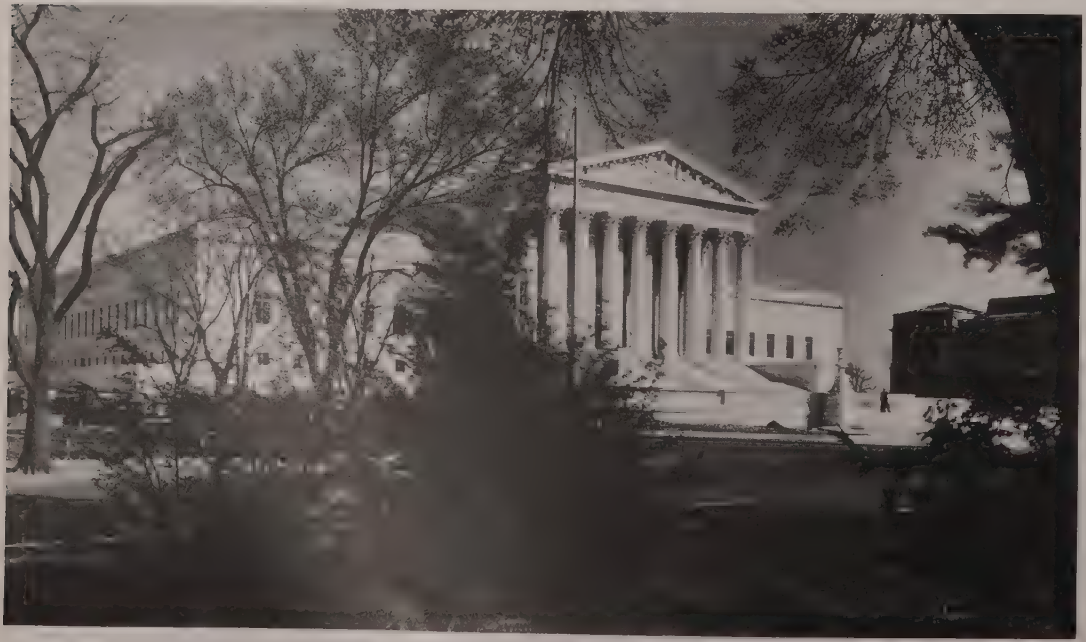
The great styles of the past are the treasure house of history, and they are the style-sources from which new styles will grow. By studying their principles and the buildings which have survived the storms of centuries, taste is acquired and a sense of design.

In our schools, too much time is given to the study of the *details* which distinguish the various styles, while their creative *principles* are either overlooked or forgotten; too many architectural books are at the student's disposal. Books are all very well in their place, but the young man who wishes to become a real architect should study buildings, their plan, their construction, how they express the purpose for which they were conceived and, last of all, their embellishment. Then he must study the building in reference to its location and surroundings and, finally, he must make up his mind whether it is a good building or a bad one, whether it is real architecture, a truthful contribution to the story of its day, or mere archæology, something taken out of the books.

Lake View Postal Station, Chicago. Supervising Architect's Office; Howard L. Cheney, designing architect

Until very recently the training in all of the architectural schools in both Europe and America has been along what are called "stylistic" lines, and has tended to make the young architect self-conscious, like the poet in those delightful lines by W. W. Story:

A Brahmin, he sits apart,
The modern poet and gazes
Way down into his heart
And examines its infinite phases
And refines and refines and refines.



Leet Brothers

The new building for the Supreme Court of the United States, northeast of the Capitol in Washington. Cass Gilbert, Inc., architect. (Cass Gilbert, Cass Gilbert, Jr., John R. Rockhart)

Pilsen Postal Station, Chicago. Supervising Architect's Office; John C. Bollenbacher, designing architect

The world today has no use for that type in any profession, and the young men in the schools and offices are keenly aware of that fact and also that something in their training is sadly lacking. They instinctively feel that architecture is *not* a thing of the past, something to be accurately defined by rule and measure. They see rising all around them great structures of varied types built for varied purposes, which in no way express the so-called "great styles" which they are being taught, and yet do express, often beautifully and with style, the purposes for which they were designed and erected. The students become confused, oft-times discouraged, and wonder whether there is any place in the world today for the architect as he has been defined to them.

What is needed in the schools and offices, and even in the streets, where people stop to look at and discuss various buildings, is to get into the minds of our people the fact that architecture is the *expression and only authentic record of civilization*, not something that *was* but *is*; only from this record do we know the habits and lives of the men of the past, just as, in future ages, the story of our age will be told by the type of buildings we erect. It is up to the young men of the profession to make this story something thrilling and beautiful.

With this conception of architecture in their minds, the students of today will no longer consider Michelangelo, Brunelleschi, Bramante and the rest, as "old bores and duffers," which they now often do, but will look upon them as live men battling with the problems of their day and trying to express these problems in brick and stone and marble with the same energy and enthusiasm as the men of today are telling our story in steel and concrete, in aluminum and glass.

Every age from that of Pericles on down to today has produced architectural giants, and the stories of their lives should form an important part of architectural education, so that our young men learn how they faced life and conquered it.

The history of architecture should be taught as the history of civilization and of art, and thus fire the imagination of the youth of every day. The human soul has but four fundamental needs—food, shelter, love and beauty—and every struggle of the human race has been to acquire one or more of these fundamentals.

Our forefathers found America a trackless

Leet Brothers

The Folger Shakespeare Memorial Library, southeast of the Capitol in Washington. Paul Philippe Cret, architect wilderness, and their first task was, out of the materials at hand, to provide shelter and food for their families and themselves. Architecture first expressed herself in America in the simple cabin built of logs. Food and shelter and security for love-making being provided, that other demand of the human soul, the craving for beauty, began to assert itself and, by degrees, buildings were erected expressing the lives and activities of the people.

Climate has always had a great influence upon the type of building which man has erected, so we see many differences in the buildings in the different sections of the Atlantic colonies, but yet a harmony so definite that a distinct architectural style was created which we call "Colonial." We cherish the buildings of the colonial period and the first thirty years of the nineteenth century as our choicest historical monuments. During those years America produced men of real architectural genius such as Jefferson, Hoban, Thornton, Mills, great contributors to the history of civilization in America. All of these men in their works used the language of the past, translated or rather adapted to the patois of their day. With the exception of Jefferson, none of the men whose names I have mentioned had visited Europe, and the number of architectural books in this country was very limited; these men had never studied "Architecture," nor would they have known how to do so, but they had studied life and had inherited memories and traditions handed down from father to son. Up to the time of Andrew Jackson, the United States was a fairly homogeneous country, as its architecture shows.

The Napoleonic wars brought many strangers to America, and the expansion to the West began with the culmination of the Louisiana Purchase; with this expansion came industrialism, and with industrialism a destruction of taste and of all sense of cultural values, not only in this country but throughout the European world.

In the last three decades of the nineteenth century, the growth of the country was too rapid and the pressure upon the architects for immediate results too great to allow the time needed for the development of a real style, such as would truly express the civilization of the day. Nevertheless, while the older men were distracted with work, turning out all kinds of buildings in every known historical style but utterly without *style*, the younger men in the schools and offices in all parts of the country were getting together, grasping America and what America means, and trying to find out what was to be America's contribution to the world in business, in science, in art, and in architecture which embraces them all.

* * *

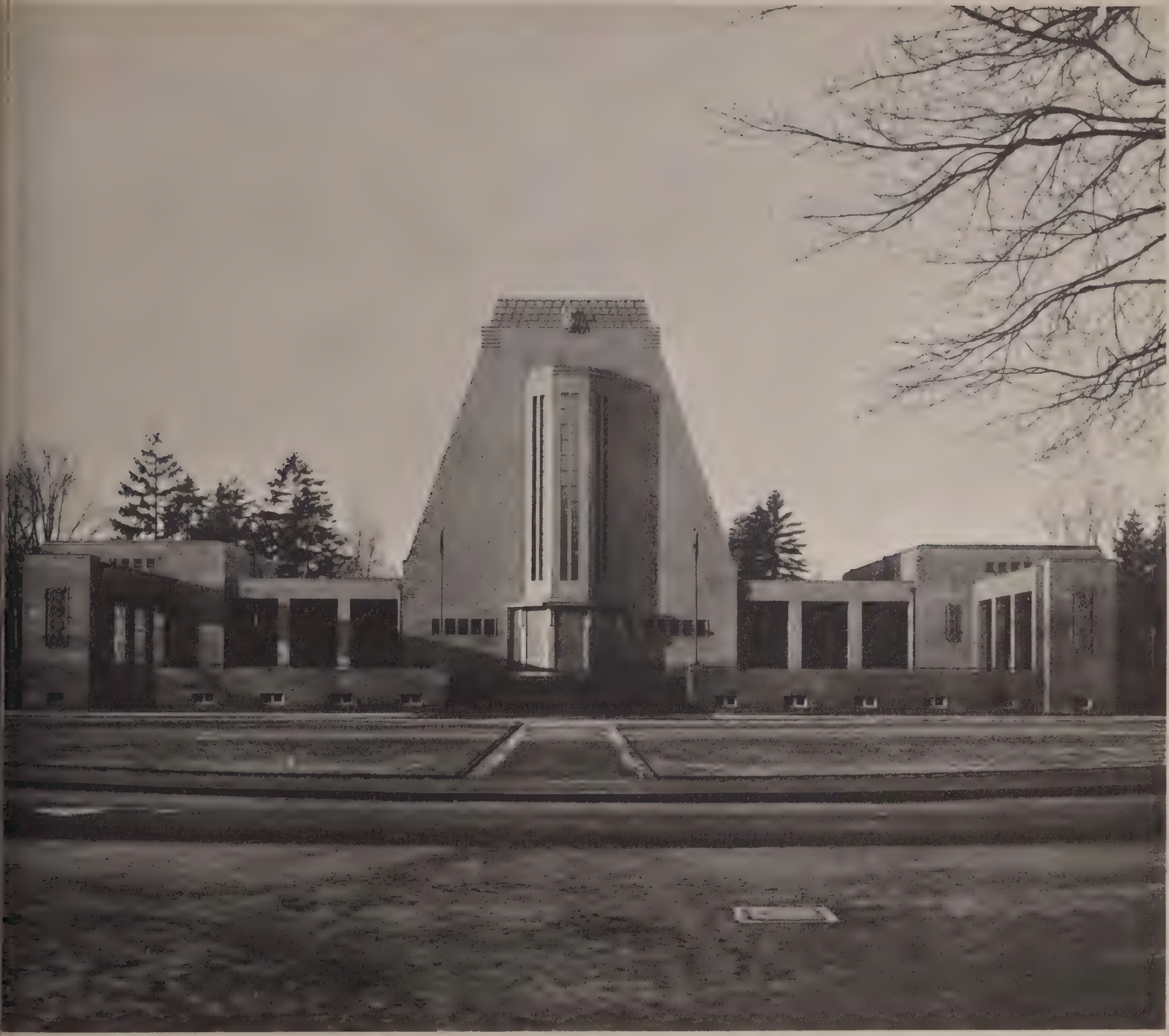
Then came the World War.

Seventeen years have gone by since the Armistice, and we are just beginning to realize what that titanic struggle meant. Its immediate result can be summed up in one word, "Liberation," but at first this liberation took the form of utmost license; all restraints, all conventions, one might say all those decencies which had developed through the centuries and had regulated human life and intercourse, were scattered to the winds. Fortunately that period of utter abandon was not long lived, but nevertheless it left its mark upon literature, the drama, painting, sculpture, and especially upon architecture. What that mark is we are just beginning to understand.

In architecture it has meant a letting in of light more than any other one thing; with more light came the demand for more space and, as the mind found more space in which to stretch itself and more light in which to see, the soul demanded simplicity. These three demands—light, space and simplicity—are the foundations upon which modern art is built.

Their field of action is so broad and their possibilities so exciting that youth, carried away by the spirit of adventure, and always irritated by any form of restraint, is apt to ignore completely the past in its effort to be original. Often have I told students who have come to me for advice that we might as well expect each child born into the world to invent a new language as to try to invent a completely new architecture. New architectural forms there will surely be, just as new expressions enrich our language, but we still study the Bible and Shakespeare and Addison and our own Lincoln for the finest words in which to express our thoughts.

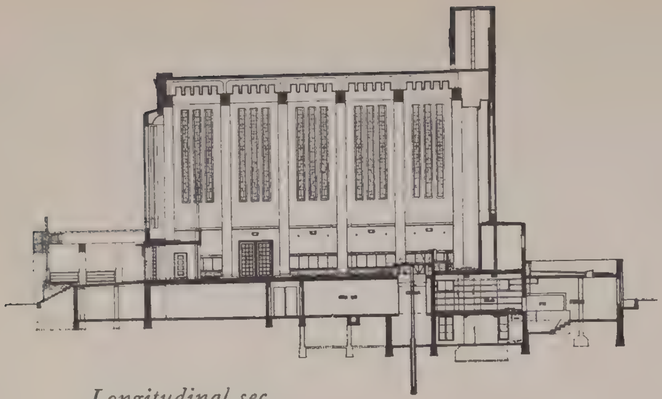
In the same way must we, while availing ourselves of all the latest thoughts and discoveries of our day, ever remember and treasure what the centuries of building have taught the human race. Only by so doing shall we be able truly to grasp the great opportunities before us, and create an architecture which will tell to future generations the story of what America means in and to the world.



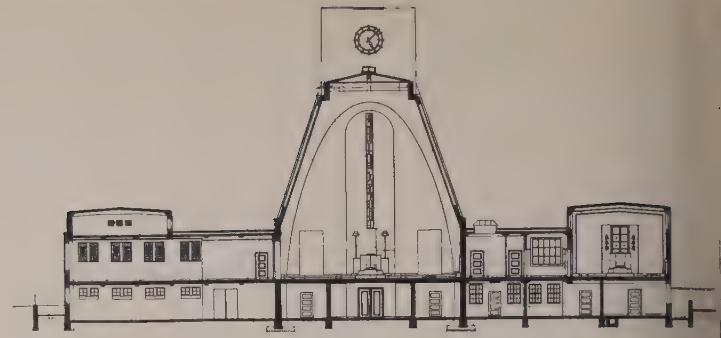
The structure is of reinforced concrete faced with brick of a blue-red color. All of the ornamentation—which is very much restricted—is in brick. There is a broad terrace across the front with the entrances through the loggia

FRITZ SCHUMACHER
ARCHITECT

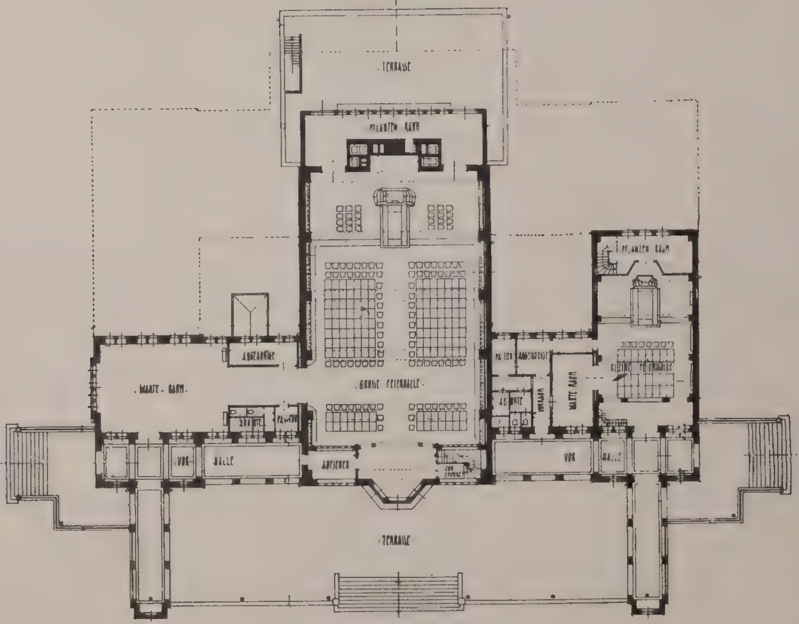
Crematory in Hamburg



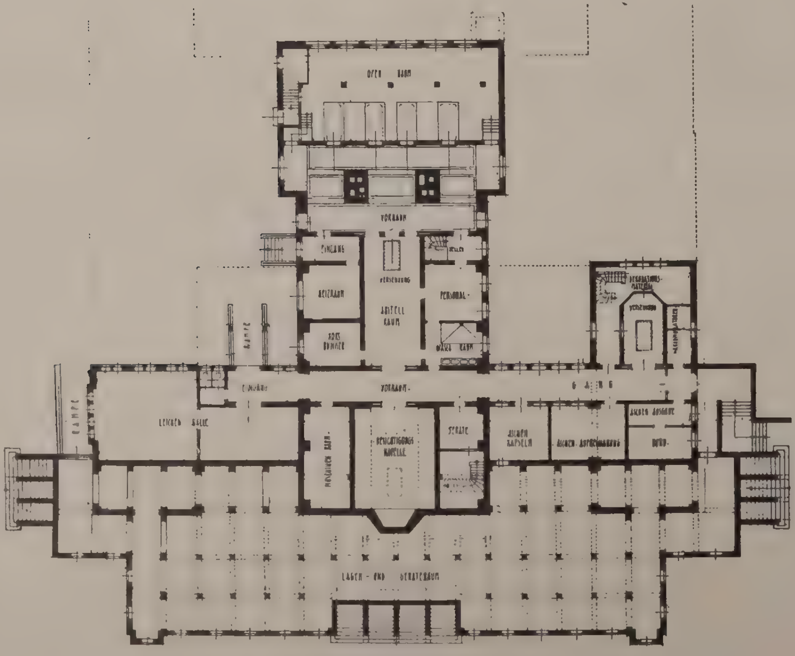
Longitudinal section through the large hall



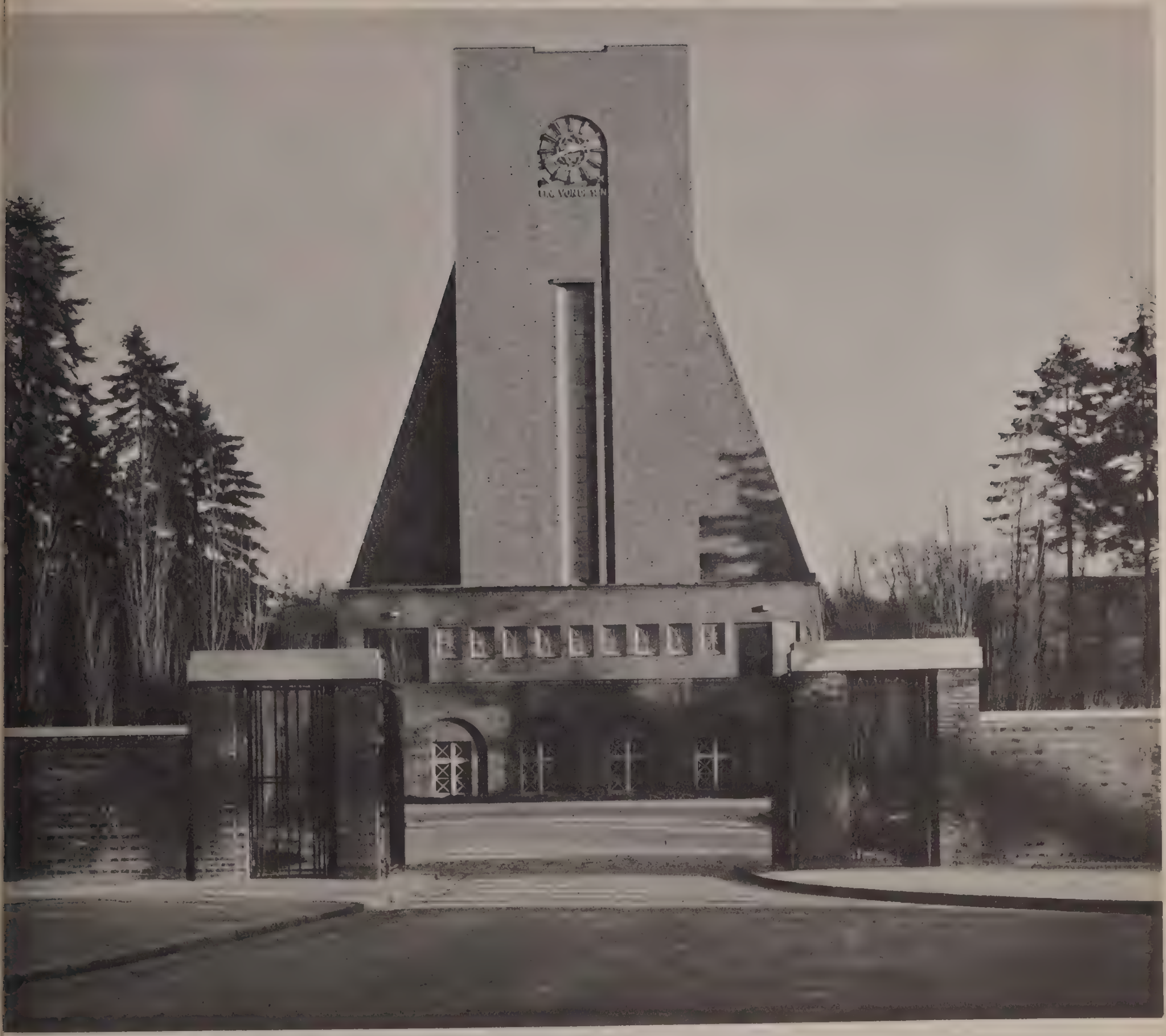
A transverse section through the waiting-room, large hall, and small hall



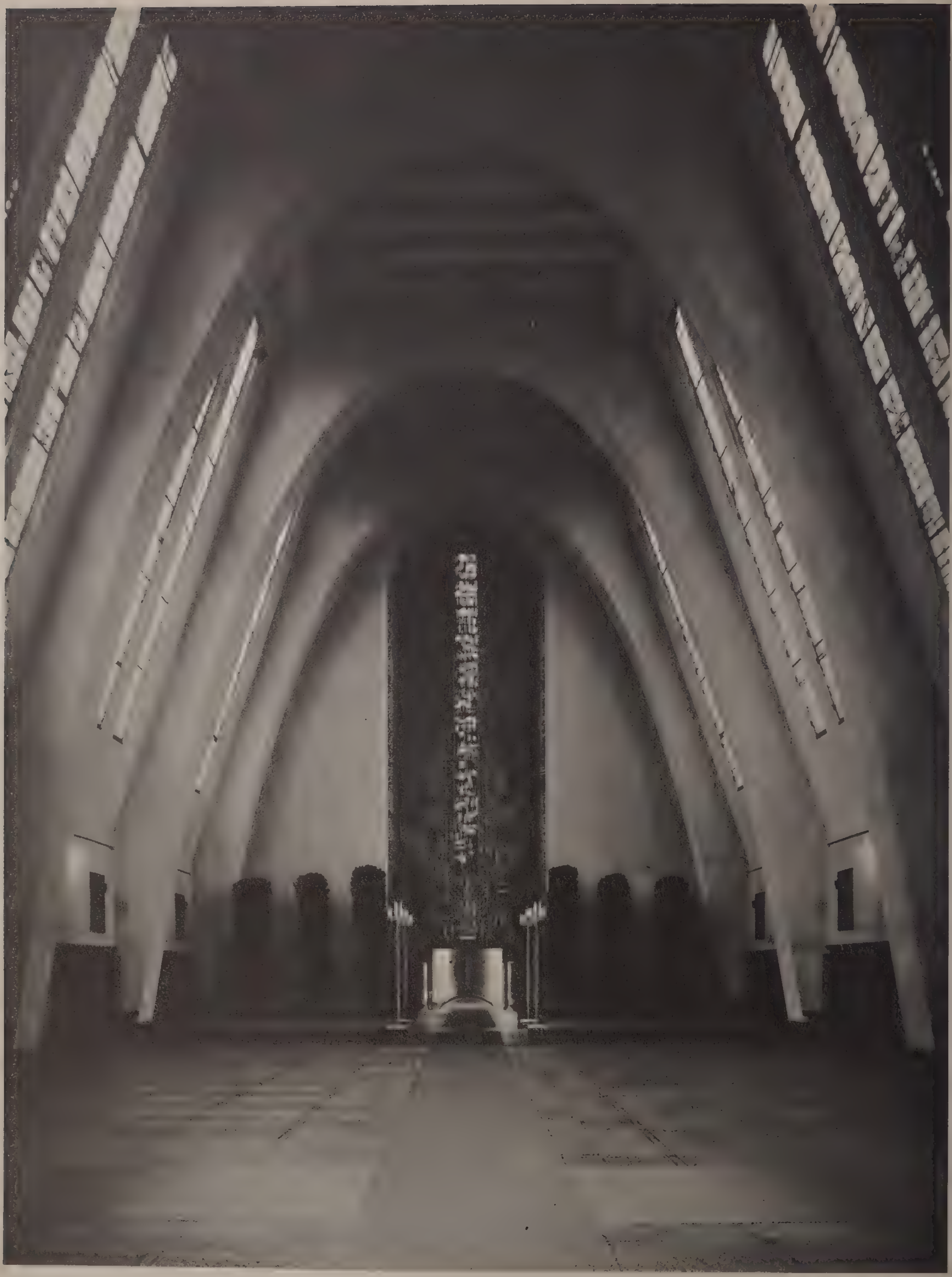
At left, the plan of the upper floor. At the left of the plan is the entrance and ante-chamber for the larger hall. At the right, the entrance and ante-chamber for the smaller hall. For each of the two halls, behind the bier, there is a flower room



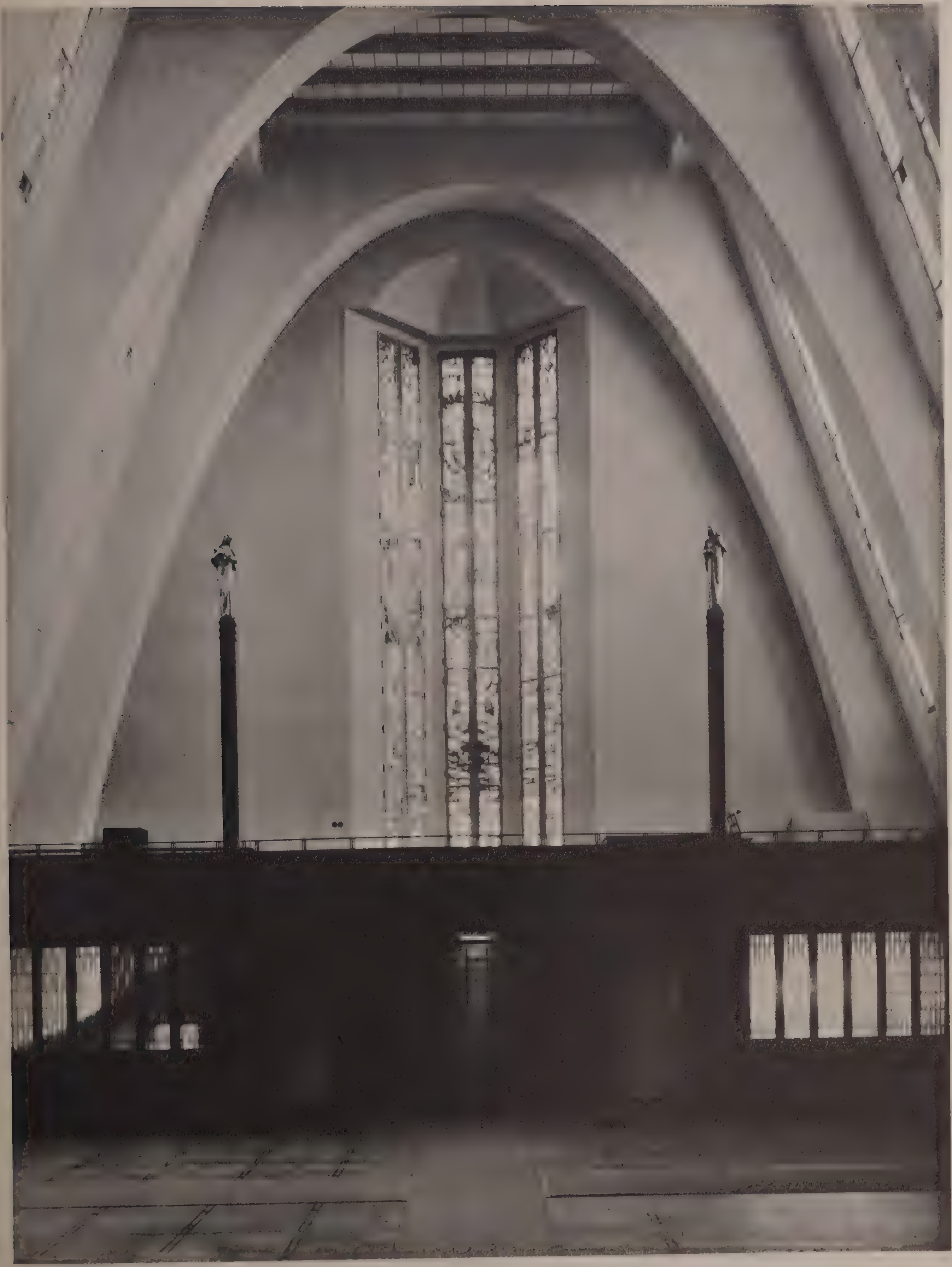
At right, plan of the basement floor. At the top of the plan is the location of the ovens. Elevators lower the bodies from the large and the small halls to space beneath, from which they are wheeled to the ovens



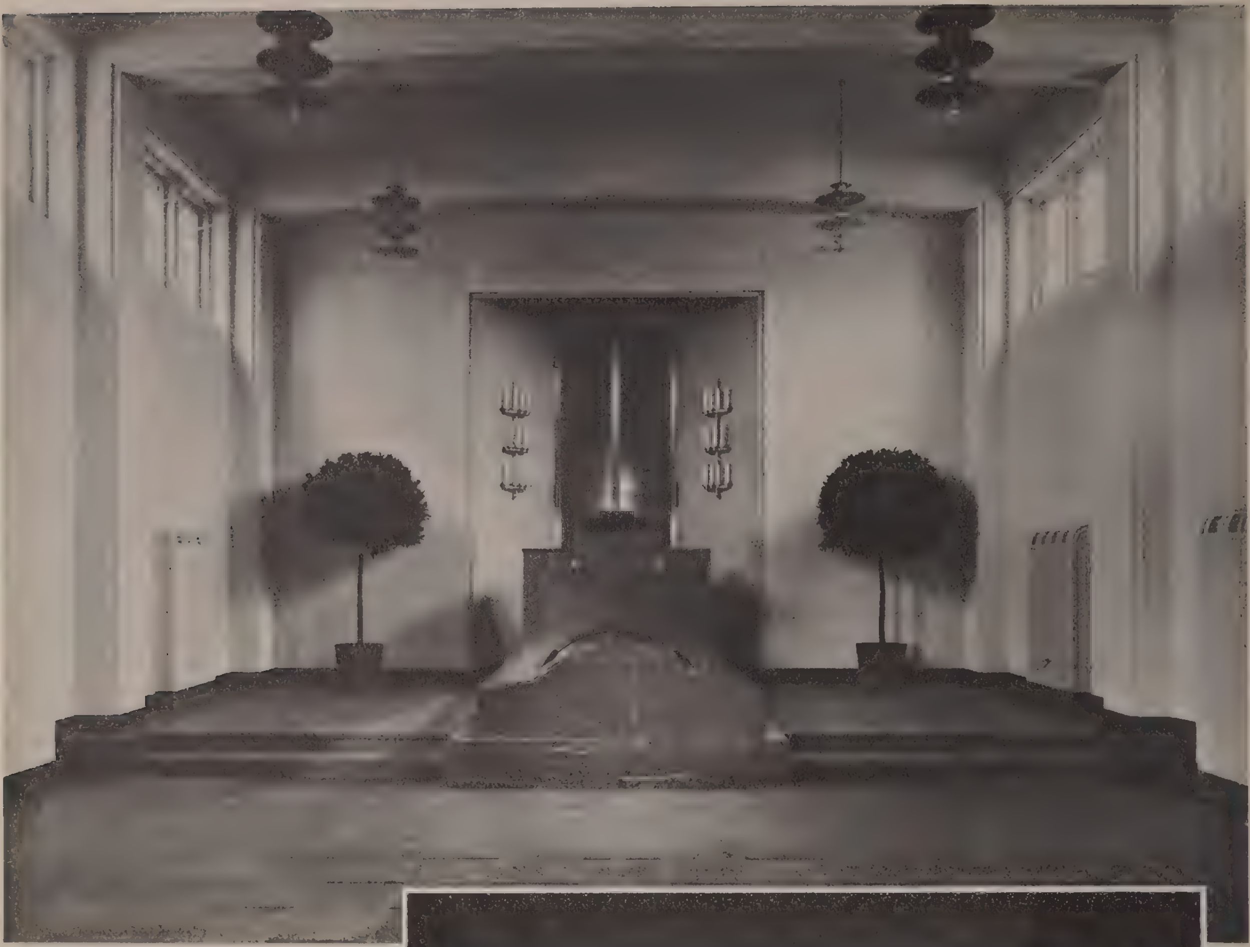
The receiving end of the crematory, the lower level of which is here at grade



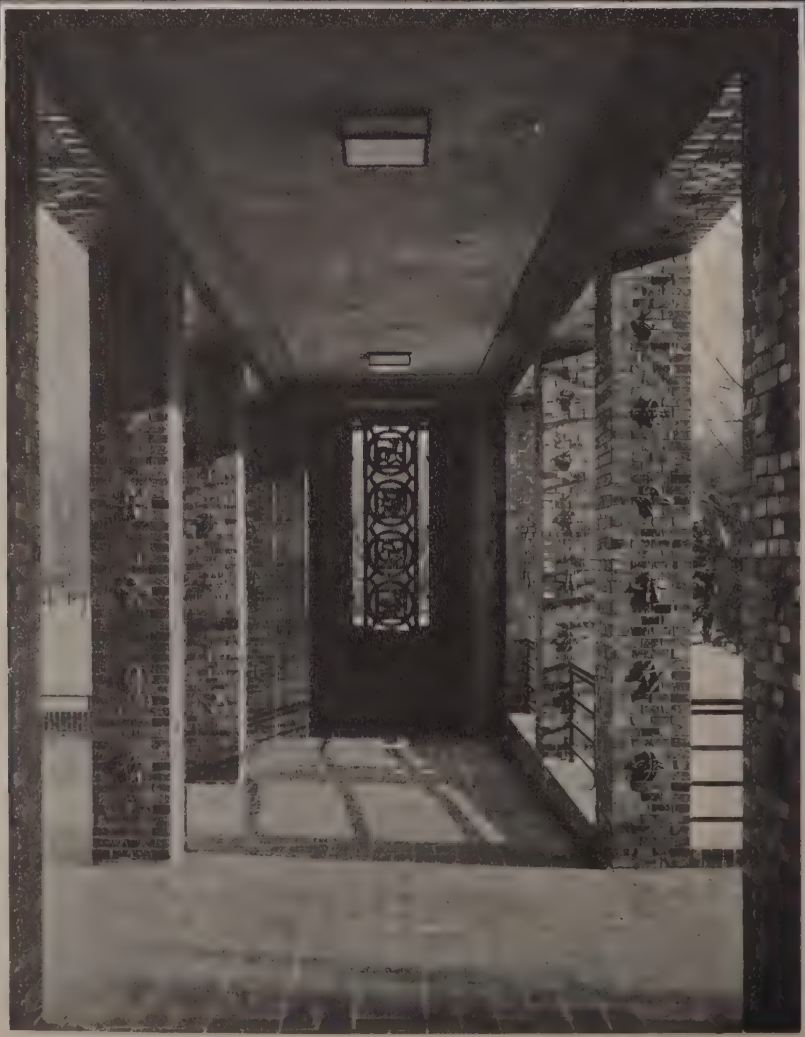
The larger hall, looking toward the bier. The great niche behind the bier is decorated with mosaics in blue and silver. The windows have glass in blue, green, and red



The other end of the large hall, which has a gallery for choir and musicians above the entrance. There is an organ, no part of which is visible



Front end of the smaller hall. The bier is of green marble with bronze trimmings. Floor is of cork; lighting fixtures of silver bronze. The large bronze doors in the niche lead to the flower room



Looking out upon the entrance loggia from the waiting-room of the larger hall. The ornamentation on the brick piers is of specially molded brick

Are We Building Too Well?

By William Orr Ludlow

FOREWORD: Cheap construction is usually the most expensive, not always to the builder, but to the ultimate owner, and a good general zation is "use the best." But the "best" for any particular job may not always be those materials and methods which will make a building *last longest;* there are many factors which determine the "best," and one factor that is quite commonly neglected is the probable economic length of life of the particular building in question. This factor, I believe, has been sadly neglected, but in the design of our buildings should take its place in any painstaking and thorough consideration of what we should use and how we should use it.

◆

How much money do architects waste by designing buildings that will last two hundred or three hundred years, when they know that the useful life of buildings is perhaps about fifty or seventy-five years? A seventy-five-year-old building was built about the time of the Civil War; not so many of these still exist, and of those that are standing most are unproductive because they no longer meet present requirements. And, due to our more rapidly changing conditions, there is little reason to suppose that our present buildings will be standing seventy-five years from now.

For this reason, in our design of industrial, institutional and commercial buildings, particularly, and in most residential work, we should plan to use such materials as shall have a life somewhat commensurate with the probable term of existence of these buildings.

Monumental buildings, of course, may have a much longer life than commercial buildings, and may require materials good for a much longer time, and it can hardly be too strongly emphasized that the *cost of upkeep* for all buildings, for their reasonable time of existence, must always be a factor in the selection of materials.

We should also consider, in our design, the economic waste that comes from the unnecessarily small value of the perfectly sound materials that may be salvaged when the building has outlived its usefulness.

It is a fair question then: Do architects usually give much thought to the ultimate life of the materials they use, or to salvage values? Do they ever think of the money wasted when a building has to be literally twisted and wrenched apart and battered down with greatest difficulty, and with almost total destruction of its materials?

Now here are a few things that if done differently might avoid some of this waste:

Brick is commonly laid in mortar of 1 part cement, 3 parts sand; and in much work, such as curtain walls, the resulting strength is far beyond what it need be, using unnecessary cement, making demolition a tough job, and the salvaging value of the brick almost nil.

Moreover, in exterior curtain walls, with strength far beyond actual carrying capacity, the most vital consideration is water-tightness, so such a wall if laid in mortar composed of 1 part cement, 2 parts lime, and 7 parts sand, with a small amount of damp-proofing compound, has not only greatest salvage value and is economical to lay, but has maximum water-tightness. There are on the market also some excellent cements, cheaper than Portland cements, which are damp-resisting and permit of comparatively easy demolition, giving greater salvage value to brick and tile.

Face-brick work, with its slow and costly hand labor, may be replaced with large units of either clay or metal, which would be easier of demolition and have greater salvage value.

Further study and experimentation should be given to the replacement of heavy exterior curtain walls by walls with a skin, or weather-protecting covering, backed up by light metal or composition membranes to provide the necessary insulation. In the near future we shall probably see most buildings carried by steel frames and enclosed by thin walls of weather-resisting and insulating materials.

Wire-mesh reinforced concrete floor slabs are economical enough, but here again removal is arduous and there is no salvage. Gypsum and other composition slabs, carried on light steel framing, are coming quite largely into use; and they are easily cut for pipes, alteration work, etc., have good sound-deadening qualities, and can be used again.

Plaster has no salvage value, and particularly when used on metal lath makes removal difficult. How long will it be before we abolish plastering—a slow, messy process, and one that brings unnecessary tons of water into a building?

We might profitably use bolting more often instead of riveting or welding, for the steel work of certain smaller structures, where wind pressure is not a great factor. Bolting is cheaper, sufficiently enduring and permits of more economical demolition. Removing rivets is too long a process to be practicable, so we commonly see the steel members cut off near the bearings by the blowtorch, with the consequent mutilation which greatly reduces salvage value of both columns and beams.

Many millions of dollars have been put into tiling of bathroom wainscots. The argument for this was that tile is "sanitary," can be easily washed, and is not spotted by water. These "tiled bathrooms" were perpetuated as the speculative builder's advertising slogan, but people have begun to realize that washing down the walls of a bathroom is something of a mythical performance, and that hospital quality and appearance are not absolutely essential in the private bathroom. The universal use of tile for bathroom walls is an expensive fad. There are now a dozen materials of excellent quality on the market that can be applied in large slabs at one-half the expense of tile, and which may have real salvage value. Tile for bathroom floors is perhaps the most expensive and coldest material for bare feet available, and has no salvage value. There are a great number of other materials, less costly, that will easily last as long as everything else in the house.

Then there are on the market a great number of synthetic materials, many of them much cheaper than the natural materials they replace, and of excellent durability. These provide floor coverings, wainscotings, thin partitioning, baseboards, weather-resisting slabs, drip boards, window stools, switch plates, and a thousand and one other things, all of which can be produced in designs and colors of great beauty. Many of these synthetic materials are cheaper than the natural material they replace, and are of a durability commensurate with the probable length of life of the building in which they are used. But these materials should not be used in imitation of more expensive materials. If used with artistic appreciation, there is no reason why they should pretend to be tile, marble or wood.

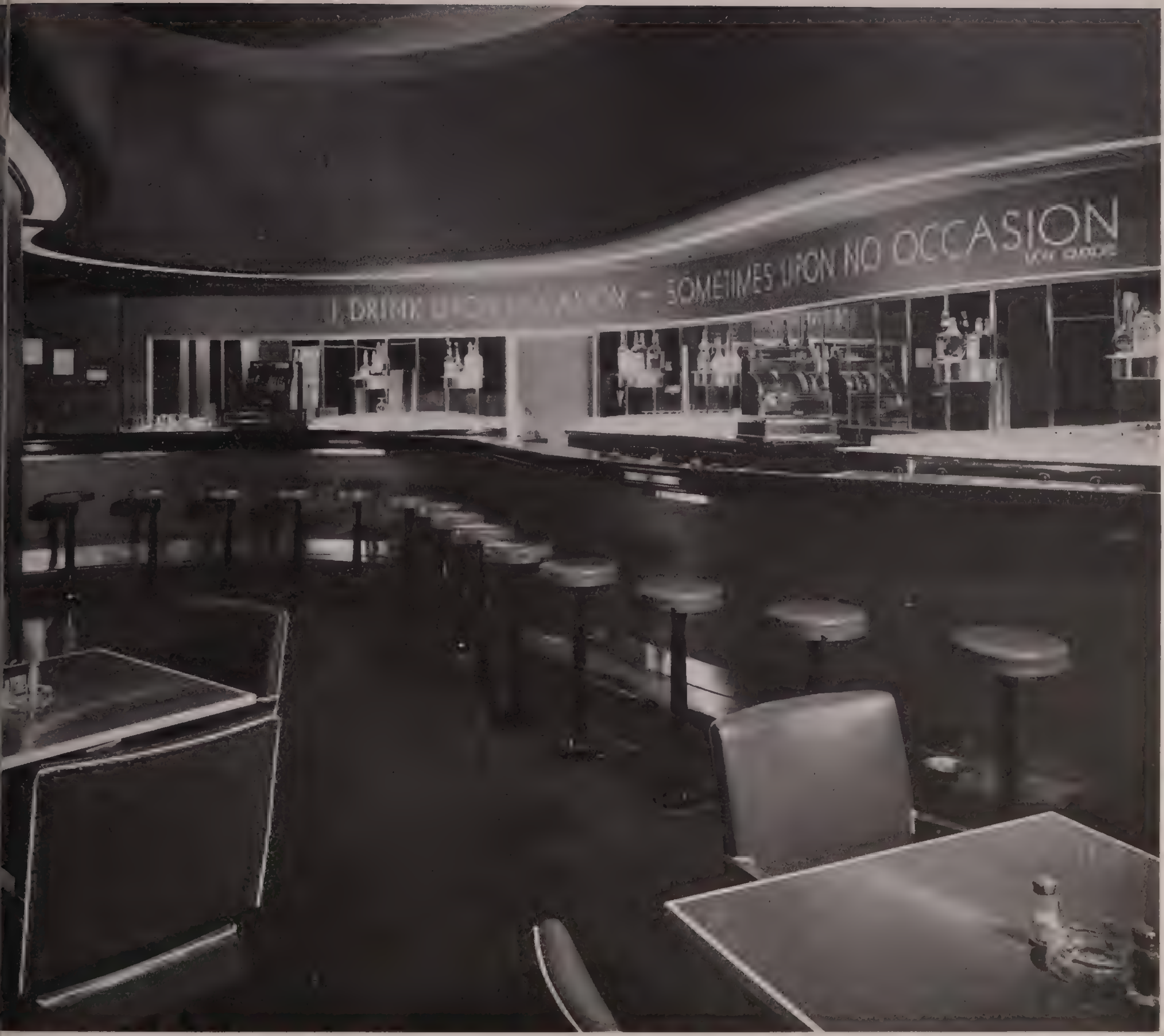
Of course, antiquated building codes, such as exist in most of our cities and towns, are responsible for an immense waste of labor and material. They call for rich cement mixtures developing strength far beyond actual requirements, steel that has a factor of safety that was necessary only before steel was the scientific and invariable product that the mills provide today. They insist on loading up steel frames with brick and tile, heavy in weight and slow of erection. All these provisions are hangovers from old customs. Where such building codes exist, architects should take the lead in the interests of their clients and the art of building generally in getting such codes revised.

◆

In design, it is particularly the architect's responsibility to get away from costly ornament that usually is quite unnecessary to beauty. In any of our large cities one has only to look up at building tops to realize that untold millions of dollars formerly were wasted on parapets, cornices, ornamental terra-cotta, brick, and stone work, that have absolutely no reason for being, and, in fact, are almost unseeable and entirely unnoticed by the public. Fortunately we have made some progress in that direction; in "modernistic" have probably overdone it; but what ornament is used should be restrained both as to quantity and location and, of course, should grow out of the material, not be merely applied to it. Architects would do well, too, to remember that using exaggerated and bizarre styles is tempting early obsolescence.

We might extend this list, but these things are perhaps enough to indicate that the use of materials whose life is commensurate with the economic life of the building is a field for study which architects may well consider.

Acceptable appearance, proper durability, avoidance of upkeep costs, must of course all have their part in the architect's choice of suitable materials and methods, but the truth is, we commonly choose our materials with these purposes in view only—with a sort of traditional notion that buildings are going to last indefinitely—quite forgetting that in this fast-moving modern age, a building fifty years old is *old*, and generally obsolete. We build too cheaply in some respects and too expensively in others.



Hedrich-Blessing Studio

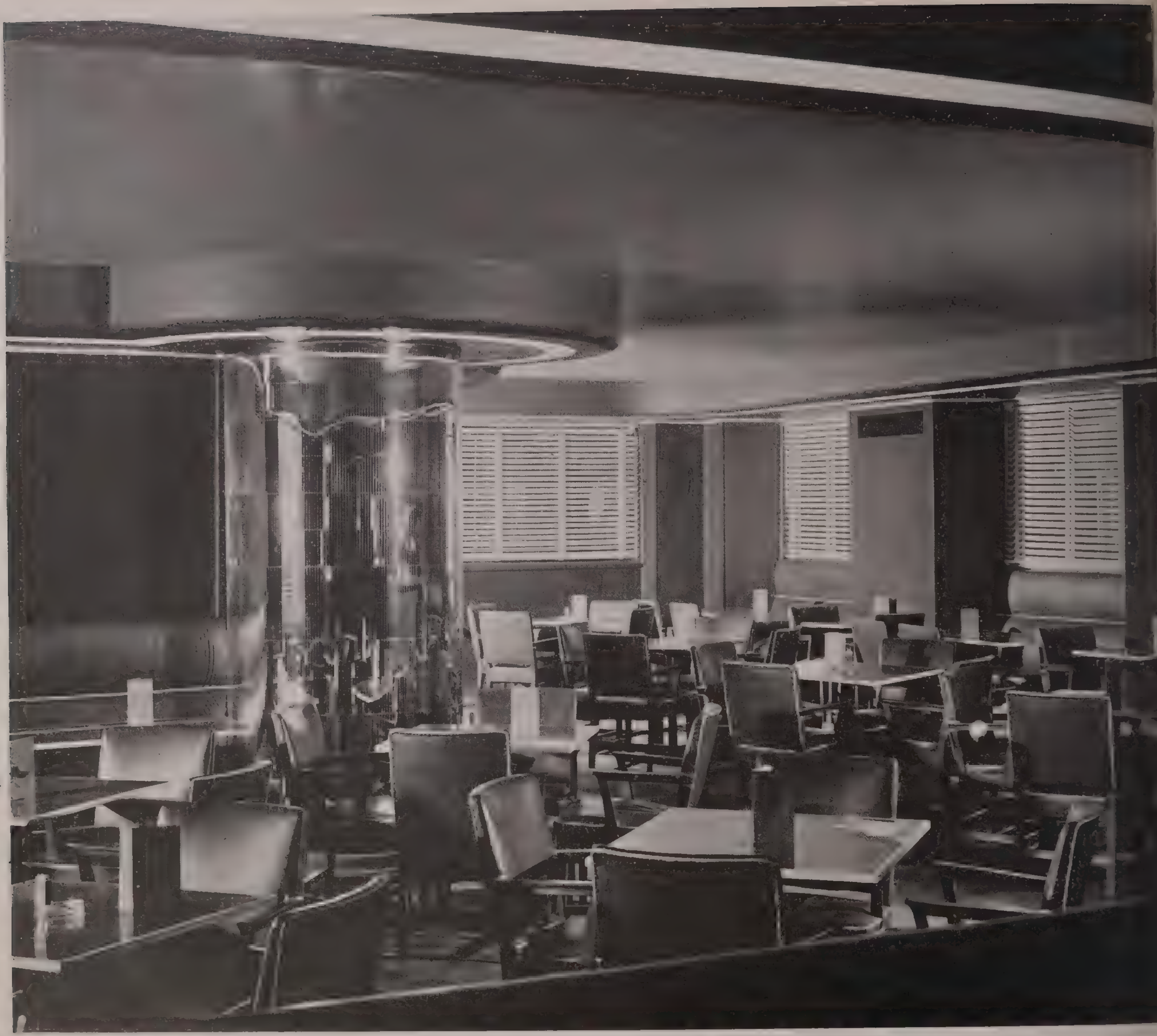
The space occupied is 41 x 43 ft., with an ell 17 x 20 ft. leading to the main lobby. The S-shaped bar is formed around refrigerated storage space, supplies, and a workroom for food preparation.

For lighting, a recessed trough follows the ceiling outline throughout.

The bar has an ebonized mahogany top, and a face of gardenia-white linoleum extending down to the terrazzo step above the rubber-tile floor. Walls here are of dark blue linoleum; the back-bar equipment being of highly polished stainless steel

HOLABIRD & ROOT, ARCHITECTS

Cocktail Lounge and Bar
Morrison Hotel, Chicago

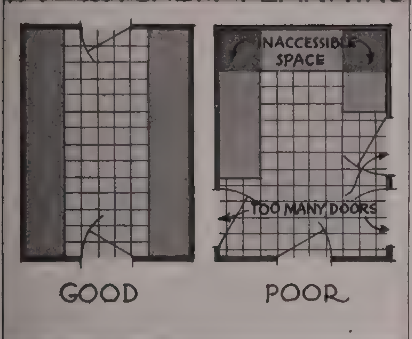


Hedrich-Blessing Studio

In the lounge adjoining the bar, the walls are covered with Burgundy suede cloth, the wall seats upholstered in a blue leatheroid piped with white. Table tops are of formica in bright red satin finish. A bright red carpet covers the floor.

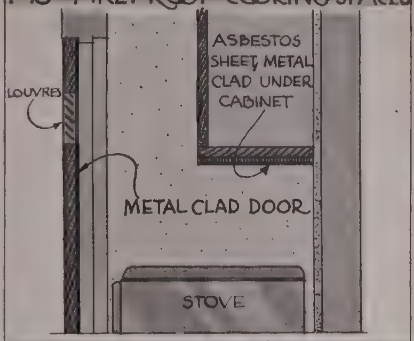
The lounge and bar are, of course, air conditioned, the cooling apparatus being located above the nine-foot ceiling

1-A KITCHEN PLANNING



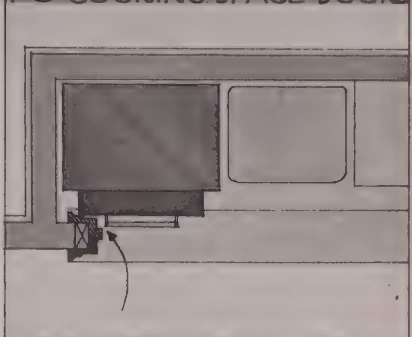
AVOID TOO MANY BADLY PLACED DOORS AND INACCESSIBLE CABINETS

1-B FIREPROOF COOKING SPACES



CABINETS OVER STOVE MUST BE INSULATED & METALCLAD UNDERNEATH

1-C COOKING SPACE DOORS



DOORTRIM IN CROWDED COOKING SPACE MAY PREVENT OPENING OVEN DOOR

Better Practice

By W. F. Bartels

KITCHEN SPECIALTIES

1—GENERAL

THE architect will recognize that most kitchen items are stock units, so that he can have little or no influence in their manufacture. He is forced to take most of them "as is." Nevertheless there are ways in which he can serve his client's best interests: by investigating and selecting those products which are of the best construction; and by placing and co-ordinating the various kitchen fixtures so that they will all tend toward a more efficient kitchen. These duties still remain in the architect's province, in spite of the many agencies soliciting his client to allow them to supply this service.

Efficient counterspace is still one of the prime necessities in the modern kitchen, and is all too often overlooked. There should be plenty provided at the rear door where supplies will arrive, as well as near the dining-room so that the dining table may be cleared expeditiously. Neither large food-storage spaces in the cellar nor large kitchens are now necessary. Every kitchen should have cross ventilation, but most important is the width of the room, which should not be over 8′ 6″ for the average house. The space in the center of the room is not generally usable. The kitchen should be long and narrow, with only two doors if possible, and these so placed that valuable wall space is not lost where cabinets turn the corner (Fig. 1A).

Much has been written as to the size a kitchen should be. Some experts think that 90 to 108 sq. ft. is the ideal area. While this is bound to vary, in any case it should be large enough to fulfill its purpose and no larger.

Where kitchens are confined to what might be called "cooking spaces," such as in some apartments, it is desirable that such places be fireproof. If doors are used to enclose them, the doors should be lined with metal so that a fire could not spread. The metal can be easily applied to any wood door and is well worth while, not only for safety but because of the saving made possible in insurance (Fig. 1B). The metal used is generally 26 gauge, and is required in New York City where the "cooking spaces" are 3′ or less in depth. The doors should have grilled openings on the top and bottom so that the air may circulate. The bottoms of cabinets overhanging the stove must be covered with $\frac{3}{16}$″ asbestos board and 18-gauge metal.

The placing of the incinerator and sink must be given careful consideration in their relation to other units. Efficiency experts have gone so far, in some cases, as to recommend that the sink be placed in the middle of the room, but acceptance of this is debatable. However, from a practical standpoint the architect should avoid placing pipes in an exterior wall. This of course means plumbing lines which might freeze in the winter. If these lines must be run in exterior walls then they should be properly covered with insulation. It should be impossible for the incinerator to emit smoke into the room. To avoid this, the incinerator if possible should be put in a separate enclosed space, such as a vestibule, so that the odor of burning substances may be avoided.

2—STOVES

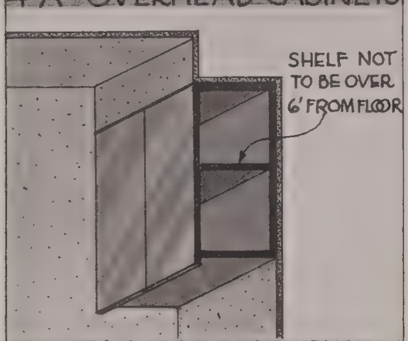
The kitchen range is one of the most important units in a house, and the architect will want to give careful attention to its selection.

The client will expect the architect to know what fuel will be least expensive, and how the electric rate will be diminished if an electric stove is used. Avoid a stove of thin gauge; it will become dented and will not only look unsightly but the bottom may drop out or become so crooked that the stove will be useless. Insulation of the stove is important because it confines the heat where it belongs—an important comfort item in summer—as well as a saving in gas or current the year round.

All stoves should be vented to the outside of the building to minimize heat and odors. This is often a requirement of many communities but one that is not strictly enforced. Where this flue goes through combustible material, however, care should be taken to see that it is properly protected so that there will be no danger of fire if the flue becomes overheated.

The construction of range doors and their method of closing should be given careful study. Doors generally have springs so that they are partly self-closing. This is done by having a counterbalanced effect with the spring on the rear of the stove, thus taking up no valuable space. The balancing of the spring, so that doors will close positively and yet not noisily is one of the earmarks of a superior stove. Also, such an arrangement tends to lessen the cost of upkeep caused by broken parts.

4-A OVERHEAD CABINETS



CABINETS SHOULD BE LOW ENOUGH WITH CEILING FURRED DOWN TO THEM

Gas stoves should be equipped with automatic pilots, while electric stoves should have temperature regulators and automatic shut-off devices. Separate circuits must be provided for all electric stoves, if it is not desired to have lights flicker when the stove is turned off and on. Where ranges are set closer than 6″ to a partition the latter should be of "fire-retarding" construction. This is generally done by filling in between the studs with brick. In fact, strict observance would necessitate framing around the stove in such manner that if there were a fire no structural members would be affected.

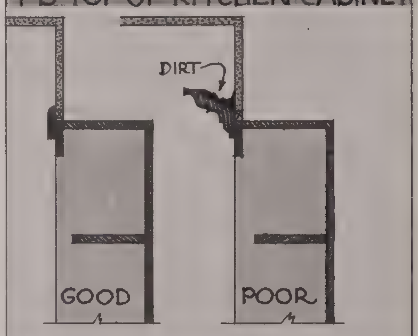
Architects can be assured that if they specify gas stoves meeting with the approval of the American Gas Association and bearing its stamp, stoves so furnished will meet with all necessary requirements.

Where gas stoves are crowded into small "cooking spaces" tight against a wall, care must be taken to see that the trim does not interfere with the opening of the oven door as might happen if the trim projection is exceptionally heavy (Fig. 1C).

3—REFRIGERATORS

There are many types of refrigerators on the market, many being used in combination with kitchen cabinets. In fact, mechanical refrigeration may now be said to be universally available in that it is even made possible with kerosene. The mechanical unit and the insulation of the cabinet are among the most important aspects to be considered. The efficiency of the insulation will greatly affect the cost of operation. In the better makes of boxes the insulation is generally the same no matter what the price. The difference in cost of these boxes is based upon the size and finish, as well as the additional fittings which are furnished with the box. The construction of the cabinet should be checked, as this varies widely, and it is necessary that it be of the best if the box is to give lasting service. The fittings are also important. Repair and adjustment service is important, and the cost of this must be taken into consideration when a box is purchased. It is generally held that two cubic feet of food storage space per person is sufficient, but size should not be skimped.

4-B TOP OF KITCHEN CABINET



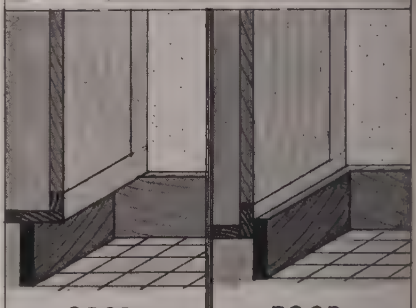
MOULDING WHERE CABINET MEETS CEILING SHOULD NOT ACT AS A DIRT CATCHER

In the small house the refrigerator will in many cases be purchased without consulting the architect, but where larger units are to be installed it will be incumbent upon the architect to select the finishes of the box, and in some commercial cases to design them in such a way that they may be an advertising asset. Where gas refrigeration is used in a confined space it is desirable that there be ducts provided for ventilation. Some warning should be provided so that the summer occupant will not turn the water off and leave the gas turned on when he leaves, because the results will be rather serious to the box.

4—CABINETS

The cabinets in the kitchen should provide as much counter space as seems advisable, and should be as closely related as possible for greater efficiency. In planning the usable space it is generally not advisable to run the cabinets all the way to the ceiling, as the upper parts would not be accessible to a person of normal height, and the shelf space above 6′ in height would be practically useless. The ceiling may be furred down to the height of the cabinets (Fig. 4A). Care should be taken that the furred part is brought out the proper distance from the wall, that the corners are absolutely square, and the furring properly braced. Proper allowance should be made for the plaster, the members being held back so that the plaster will be flush with the surface of the cabinet. If this precaution is not taken it will be difficult if not impossible to fit the factory-built unit into the space designed for it. It is not desirable to use crown molding at this junction of wall and cabinet, as it only forms a dirt pocket (Fig. 4B); and generally indicates poor workmanship, as it is used to cover discrepancies in the work. A flat

4-C KITCHEN BASEBOARD



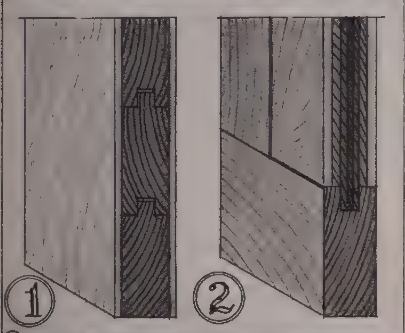
GOOD — TOE SPACE IS PROVIDED AT CABINETS

POOR — USUAL UNCOMFOR TABLE CONDITION

molding is more desirable from an artistic and a sanitary viewpoint. At the floor of the cabinets, toe-space should be provided about 5″ high and 3″ to 4″ deep. If the cabinets are set on a base this must be taken into consideration when the base is determined upon and detailed, otherwise the average workman will make it flush with the front of the cabinet (Fig. 4C).

If hinged swinging doors are provided for cupboards, they should be so placed that a person would not have to reach around them and so that they will open for the space most used. Then too, the doors must not swing so that they will obstruct any light. What is equally or more important is that when a person straightens up, the doors when open will not strike one on the head. Where the broom closet is built in with the kitchen cabinet, it is particularly desirable not to have it too deep, so that a general clean-out is necessary to get the desired article. It is advantageous also to have the floor of the closet raised a step to minimize dust which otherwise would blow in under the door. If sliding doors, instead of swinging ones, are used in kitchen cabinetwork, they should be put on metal tracks; they will work much better than if an attempt is made to slide wood on wood. The latter may work satisfactorily when new and dry, but they will certainly bind if damp.

4-D WOOD CABINET DOORS



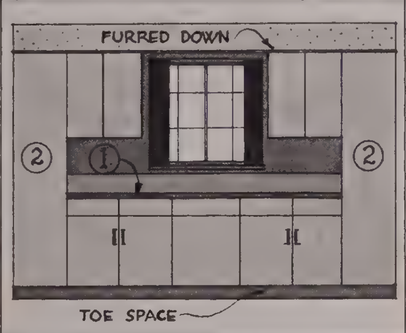
①VENEER ON BUILT-UP WOOD CORE
②LAMINATED CORE WOOD FRAME

* * *

Generally the shelving is fixed in the standard cabinets, and if movable shelving is desired special provision must be made. However, the manufacturers of standard cabinets have given the subject careful thought, and in most cases their spacing is more usable than the average client could work out.

Cabinets today are generally made of steel or wood, with flush or panelled doors of the same material. They are seldom glazed, except where leaded glass may be desired for ornamental purposes. Steel doors are advisedly provided with rubber bumpers to reduce noise. If friction catches are used avoid the cheap ones—they will only give trouble. If of steel, the doors and cabinets are generally made of 18- or 20-gauge steel, reinforced at the edges. This reinforcing must be carefully fabricated, because one of the greatest drawbacks in cabinetwork is the warping or twisting of the doors. While steel cabinets may seem more sanitary to some people, it should be borne in mind by the architect that repair work in apartments is generally high, and that steel cabinets are not as easily repaired and refinished as are wooden ones.

4-E USING STOCK SINK TOP



①STANDARD SIZE SINK & COUNTER TOP
②STORAGE CABINETS FILL SPACES AT ENDS

Wood doors are in general made in one of two ways: either a wood core is built up with two plies of veneer on each side of it, or a laminated core is made around which is built a frame of hardwood strips (Fig. 4D).

* * *

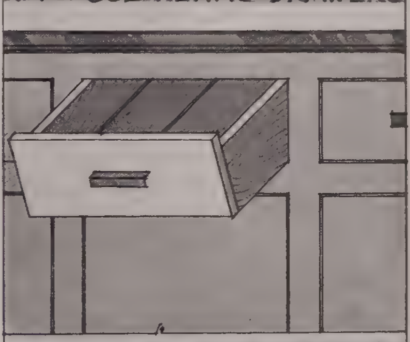
The cabinets should be finished with impervious surfacing that is not easily affected by any ordinary cleansing agent. It should be remembered that a factory finish is almost without exception superior to anything that can be produced in the field.

To make it possible to use stock sizes in kitchens of any dimensions whatsoever, the manufacturers of these cabinets furnish filler strips. Should it be desired to have one of the new and popular one-piece tops for the sink, and the space available is too large, stock cabinets for the storage of kitchen utensils can be obtained and placed on one or both ends (Fig. 4E).

The lower parts of kitchen cabinets are generally furnished with drawers or hinged doors or both. If drawers are used it may be well to have some of these in the tilting or hopper type (Fig. 4F).

The drawers themselves should be of good construction, with the corners mortised or dovetailed so that they will not come apart. If the drawers are equipped with small pyramid blocks in each corner, the housewife's cleansing job will be simplified (Fig. 4G).

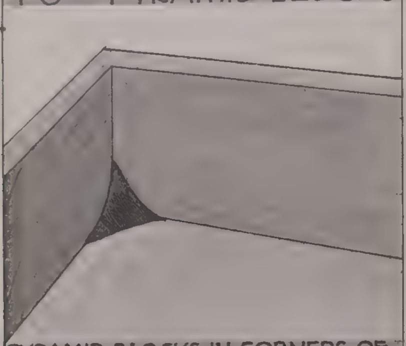
4-F USE TILTING DRAWERS



TILTING OR HOPPER TYPE DRAWERS ARE OFTEN USED FOR KITCHENWARE ETC

The development of continuous countershelves is one of the most notable of modern kitchen improvements. So many qualities must be embodied in them that it is almost impossible to cover them all. When metal is used, it should be insulated underneath to reduce noise. If the countershelf is enamelled metal, care must be taken that it is not bent or otherwise abused, or the finish will be marred. One top that has been very successful in the past few years is of composition, and it can be adapted to enamelled iron sinks of almost any size; the joint between it and the sink is made tight by a waterproof cement. A good way to fasten it is shown in the illustration (Fig. 4H). One of the best countershelves, however, is the old standby of ash, maple, or birch, properly fastened and given a coat of oil. The tops of these counters are generally 34″ to 36″ above the floor (according to the comfort of the person who is going to use them). The wall surface between the counter and the bottom of the upper cabinets may be tiled or covered with the same material of which the counter is made. This plastered space should be covered, because it is subjected to splashing. If tile is used, a good foundation should be provided. Particularly is this true if a narrow rim of tile is run around the front of the sink; this construction, however, is not recommended.

4-G PYRAMID BLOCKS



PYRAMID BLOCKS IN CORNERS OF DRAWERS MAKE CLEANING EASY

It may be desirable to have a laundry chute in the kitchen, but it should be so located as to run vertically from the top floor to the basement, and should not interrupt valuable wall space in the kitchen.

Ironing boards should be set flush in the wall and so located that when lowered they will not obstruct circulation. Many objections are justly raised to clothes dryers—or more properly called clothes racks—in kitchens; but if they are needed they may be obtained so that they fold up above the ironing board.

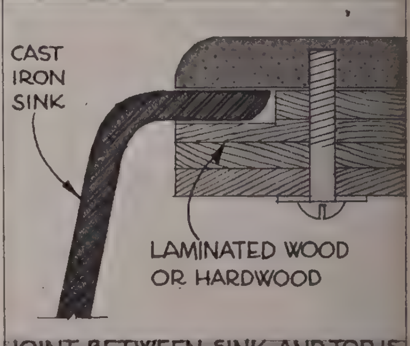
5—LIGHTING AND ELECTRICAL

It is obvious that electrical fixtures in the kitchen should be so placed that the lighting will be evenly distributed. Where indirect lighting is used facilities should be provided so that access to the lamps may be obtained without great difficulty. Too great emphasis cannot be placed on the necessity for the counter space to be uniformly illuminated. Convenience outlets in the wall above the counter should be provided in order to attach conveniently various electrical kitchen appliances. Telephones as well as bells and annunciators must be provided for in the kitchen planning. While there should be natural cross-ventilation, full dependence cannot be placed upon natural drafts, and in addition there should be a fan of adequate size, connected with a duct opening directly to the outer air and controlled by a separate switch. For a large room, a rheostat on the fan for variable speeds would be valuable. Such a fan should not be placed so that there will be any short circuiting of air, such as there might be if the fan were placed next to a window which was frequently opened. Base plugs and wall plugs should be kept on different circuits from the lighting fixtures, so that if a fuse blows out, due to overloading the outlets, the lights will not go out also.

6—WALL COVERING

The wall and ceiling surface of a kitchen, whether it be paint, linoleum, wall-paper, fabric, or what not, should be such that it will not absorb moisture or harbor dirt. Rough-textured plaster is undesirable, because it is difficult to wash. Color is desirable, and it will, of course, harmonize with the general scheme of decoration. There is a marked vogue for the interior of the cabinets to be a warm tone (such as old rose) while the exterior is cream or bone white.

4-H COMPOSITION TOP

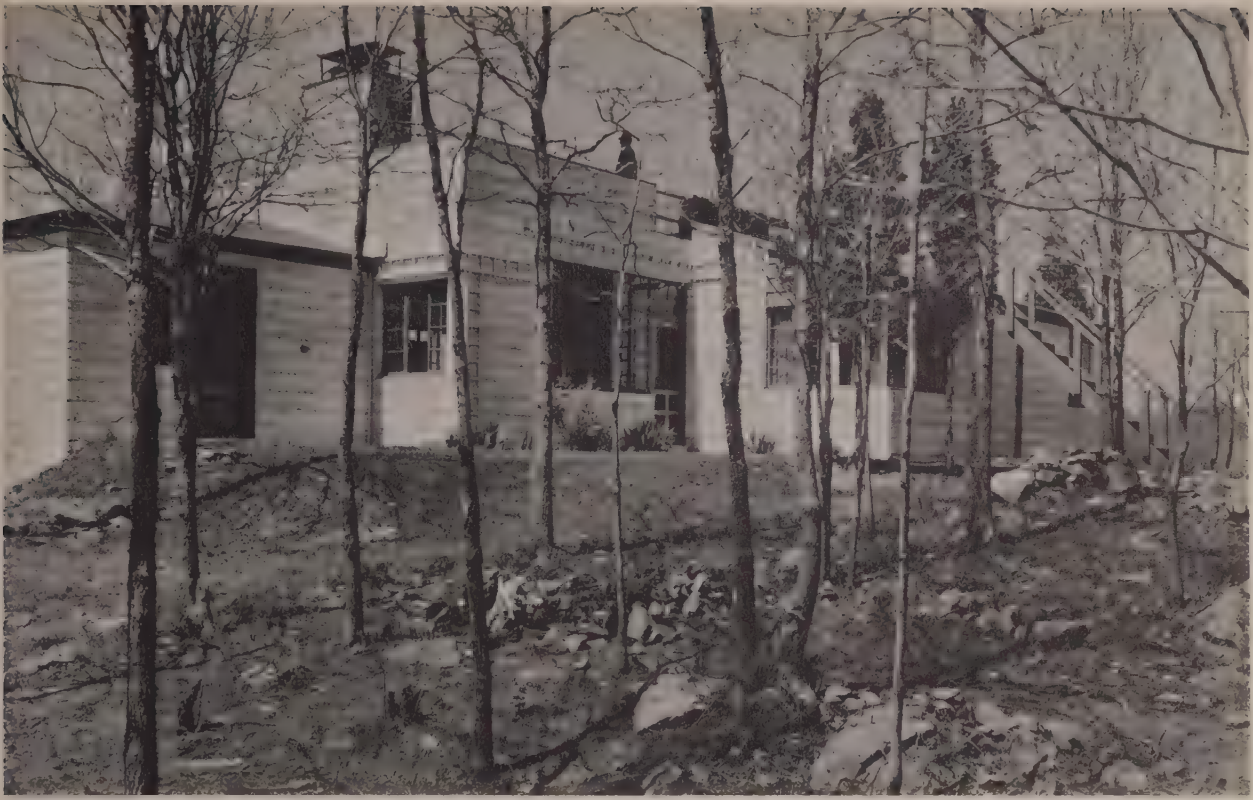


JOINT BETWEEN SINK AND TOP IS MADE TIGHT BY WATERPROOF CEMENT

Floor materials can advantageously be of such materials as rubber, wood composition, or linoleum, etc., so that the person working in the kitchen will not be unduly tired by a non-resilient surface. A sanitary base should of course be provided, so that the floor can be kept clean with a minimum of effort.

For the convenience of those who wish to refer occasionally to specific sections of the Better Practice series, these were published as follows:

Brickwork	February, 1934
Carpentry	September, 1934
Clay Products, Cinder and Gypsum Blocks	July, 1934
Dampproofing, Waterproofing and Calking	July, 1935
Doors and Windows	June, July, 1935
Excavation	June, 1934
Flooring	August, 1934
Granite, Stone, Marble and Slate	March, 1935
Hardware and Glazing	August, 1935
Heating	November, December, 1934
Kitchen Specialties	October, 1935
Painting	April, 1935
Plastering	March, 1934
Plumbing: (A) Roughing	October, 1933
Plumbing: (B) Water Supply	November, 1933
Plumbing: (C) Hot Water; Covering; Plans	December, 1933
Plumbing: (D) Chiefly About Fixtures	January, 1934
Roofing	January, 1935
Steel and Miscellaneous Iron	February, 1935
Tiling	April, 1934
Wall Board	May, 1935

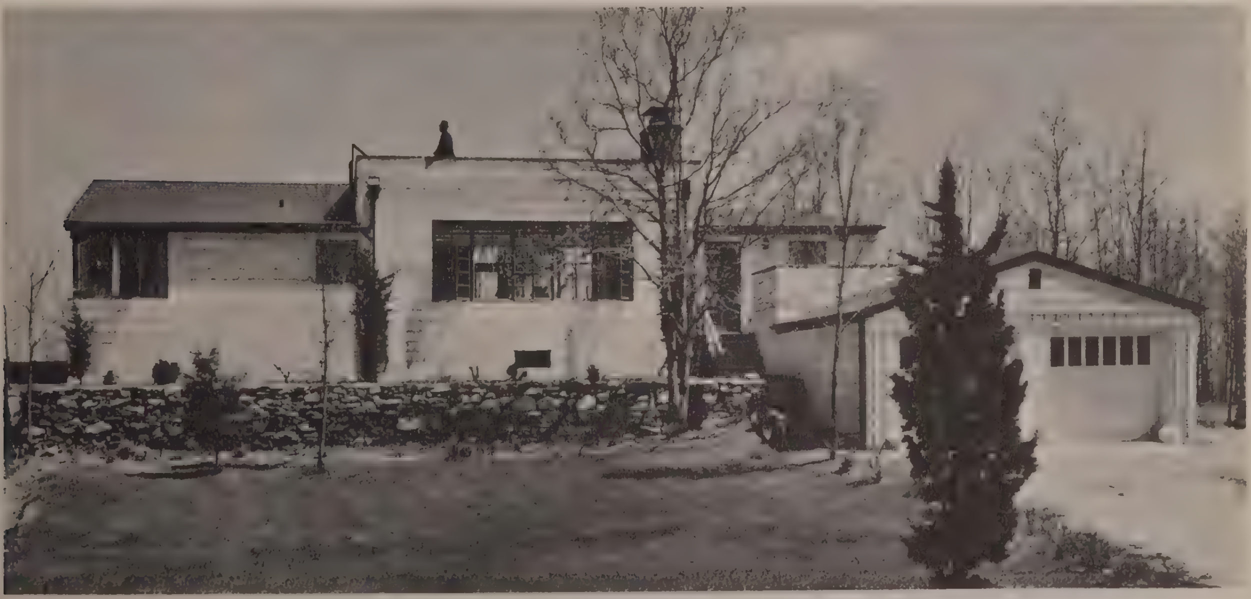


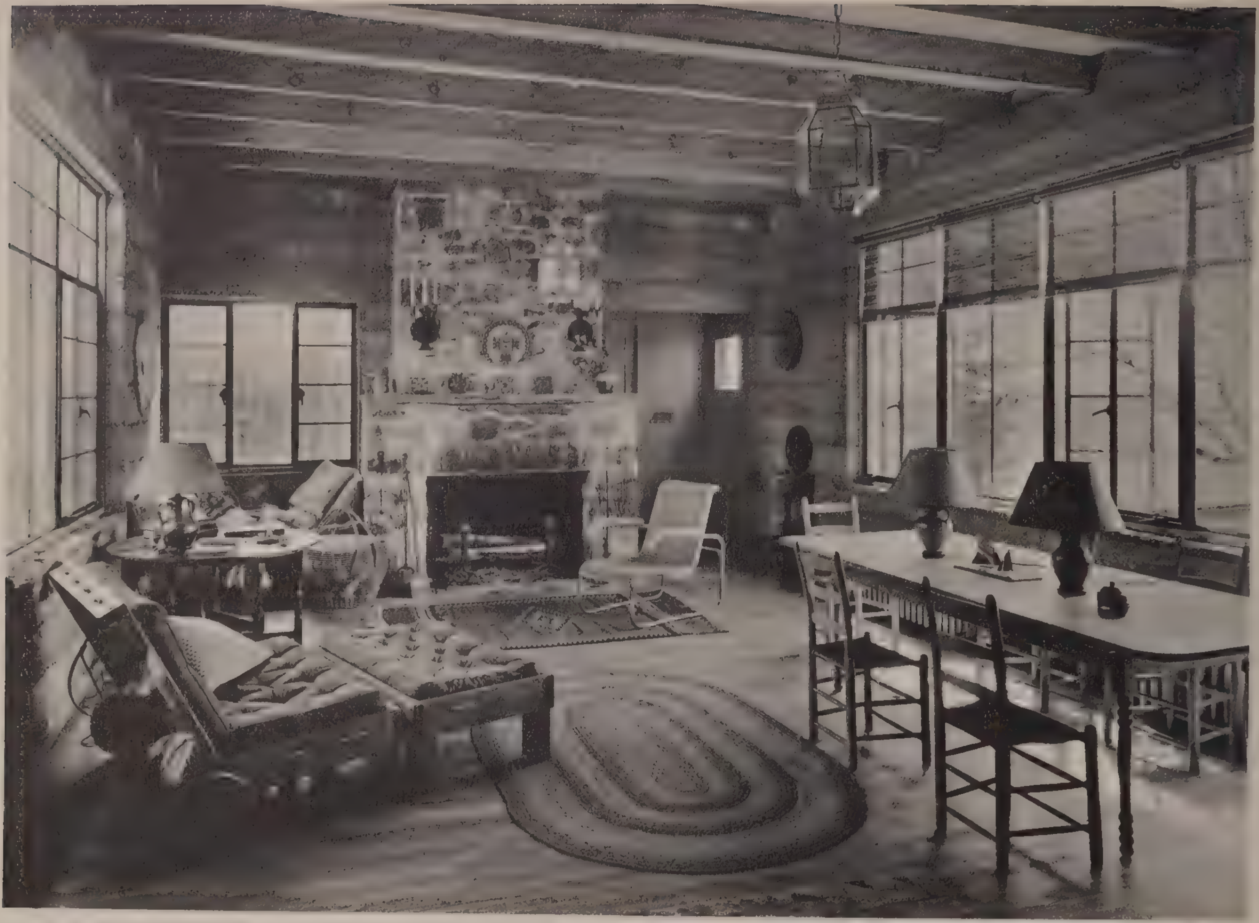
Photographs by Richard Averill Smith

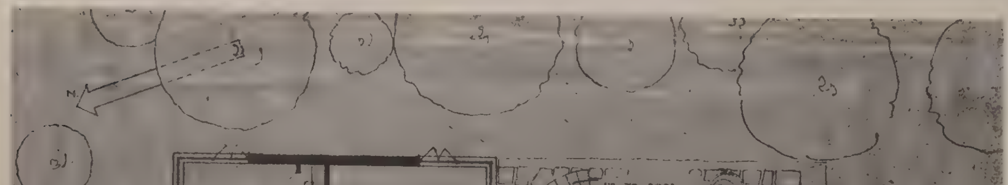
A WEEK-END HOUSE IN CONNECTICUT

Herbert Lippmann, architect

"Designing this house was particularly interesting because artistic freedom was achieved despite the very low cubage cost necessary. It was also interesting because of the striking site, and because of the special considerations of planning for practical week-end use." —HERBERT LIPPMANN

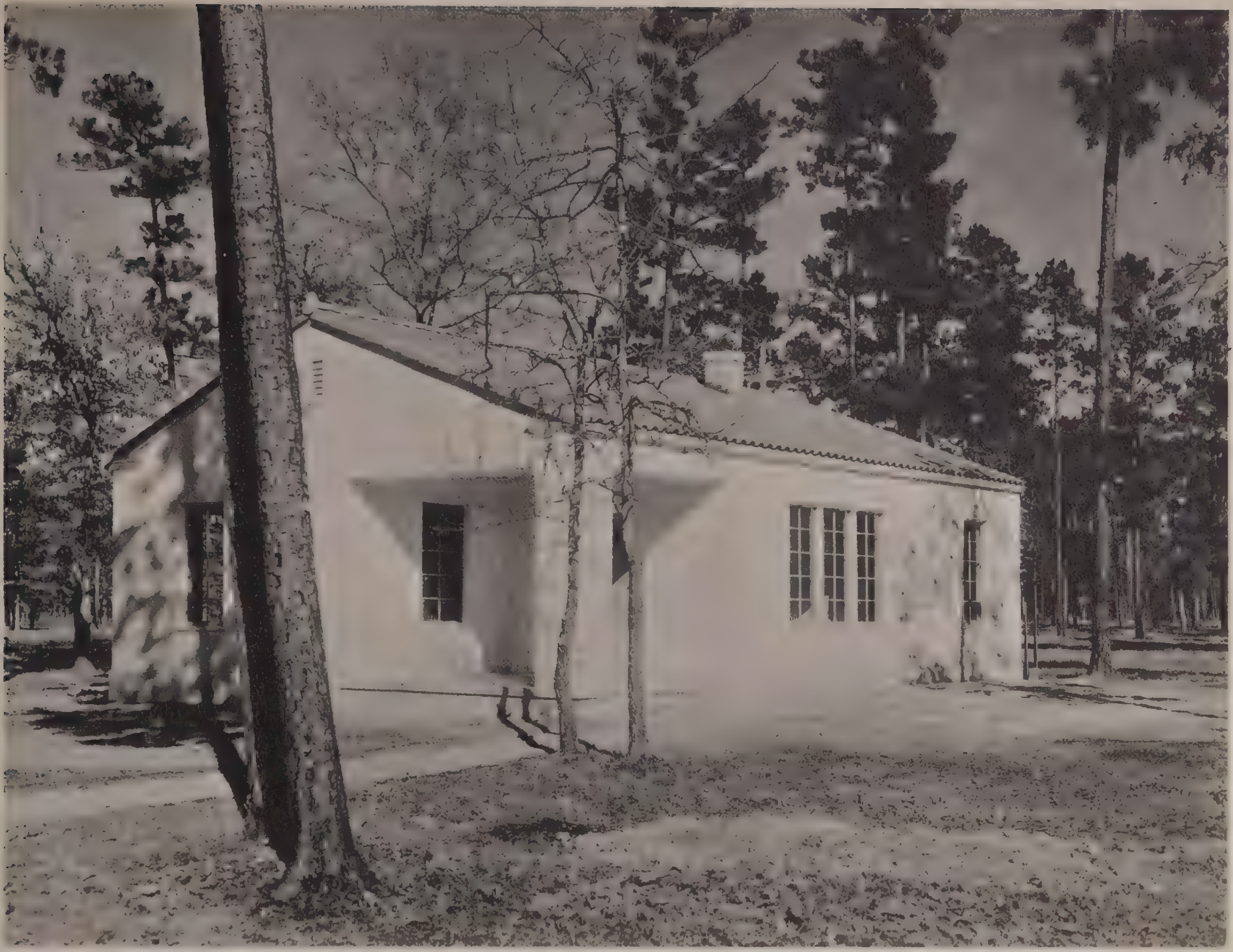






In the living-room the reinforced concrete walls, laid up with movable molds, were left untreated. Ceiling joists were stained, and they have insulating board between them under the second floor. The fireplace is of the type which also heats two supplementary ducts of air

The walls are double, and on the outside are painted a light buff. Red quarry tiles are used for coping and window sills. The steel sash and other trim are painted red-brown; the garage doors, buff



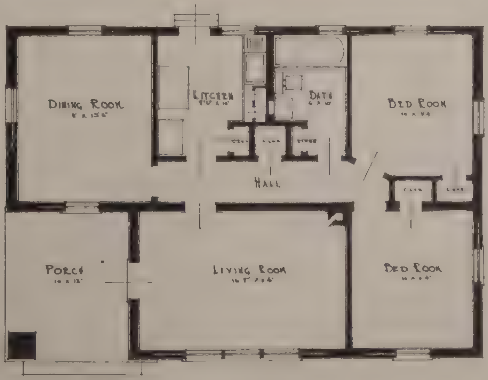
HOUSE AT NIRA PARK, HOUSTON, TEXAS

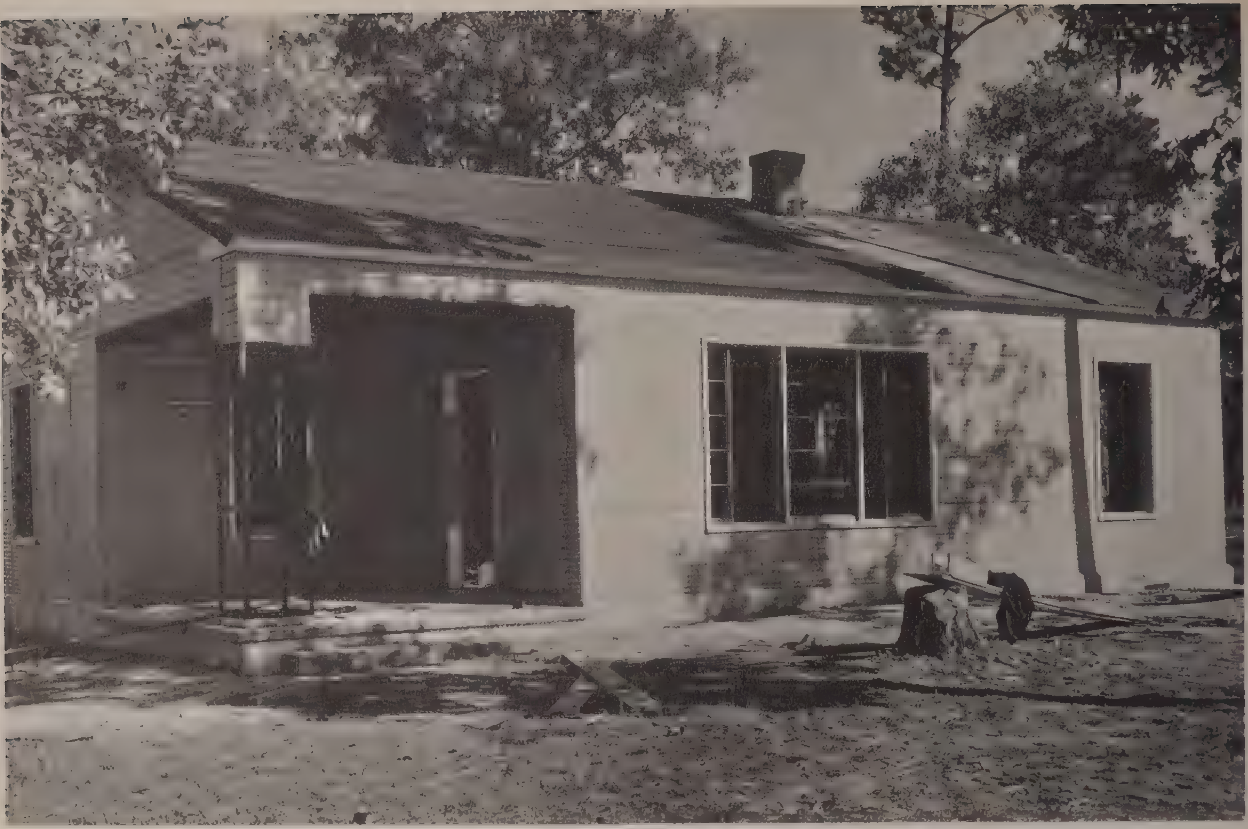
Maurice J. Sullivan, architect

> "I believe this smallest house that I have done to be successful because its construction is in materials of such permanence that it may be safely purchased under a long contract; and its cost is so reasonable that it may be possessed by the average salaried worker in the industries near which the development is located." —Maurice J. Sullivan

This is one of what is expected to be a large group of homes in the suburbs of Houston, conveniently located with respect to local industries. The objective sought was an economical construction, to be sold through a twenty-year payment plan, with little obsolescence and small maintenance cost.

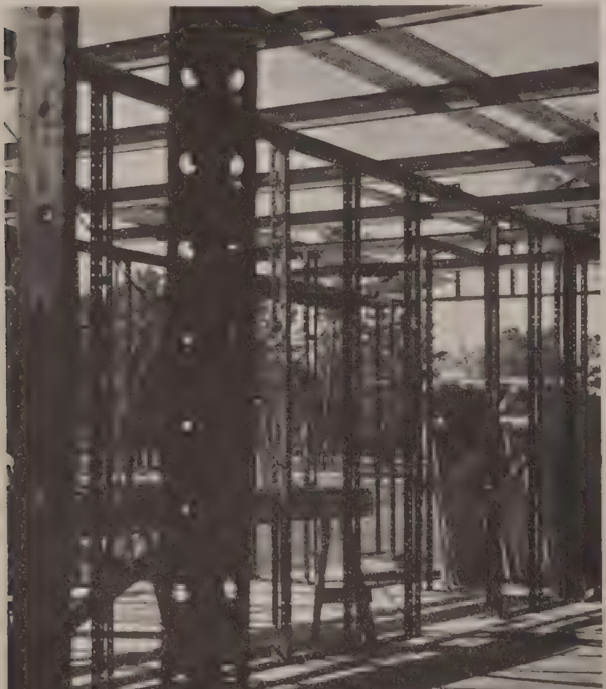
The first floor is a concrete slab on a sand fill, covered with asphalt tile. Secondary partitions are solid plaster on metal lath and steel studs



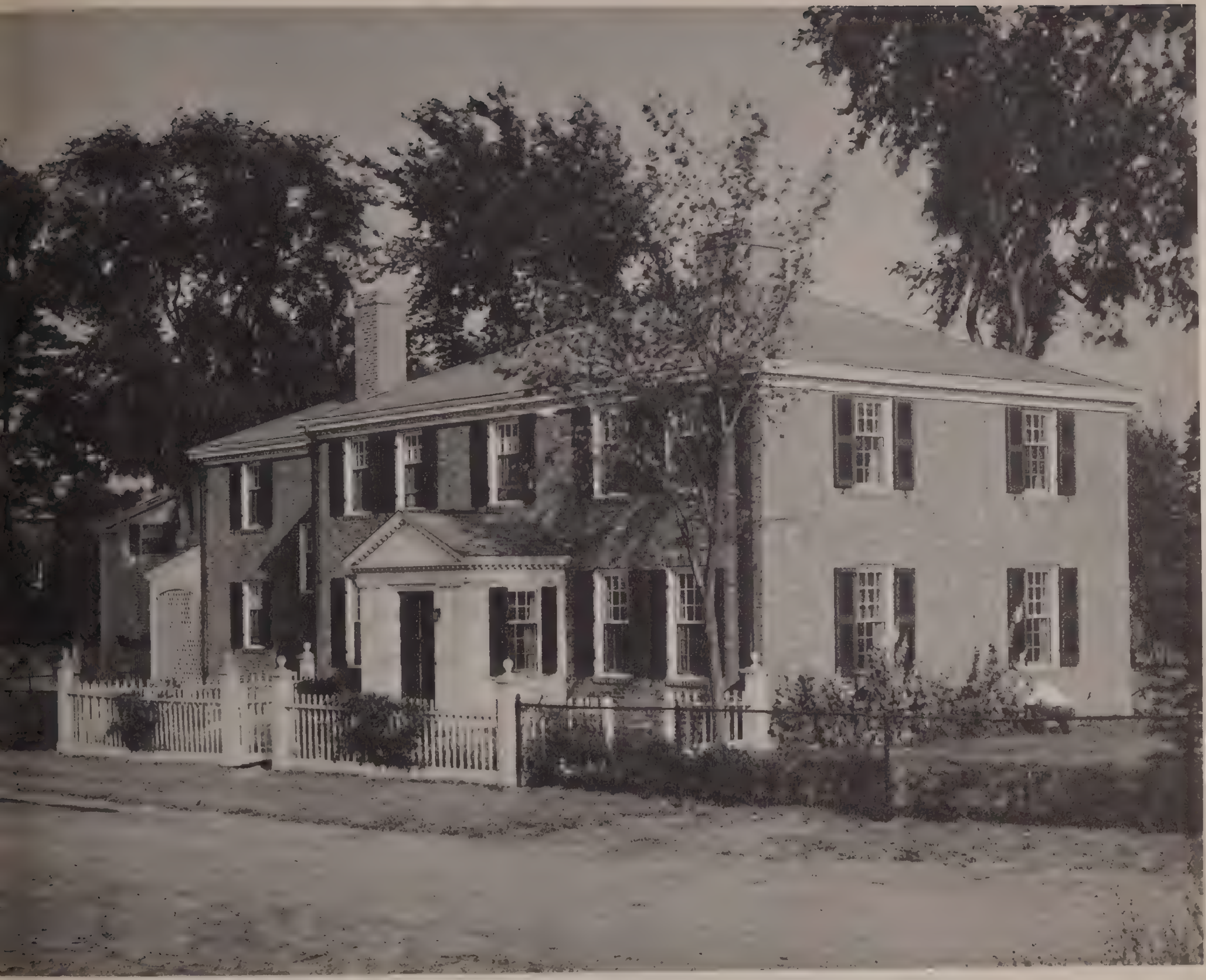


The exterior is plaster over a large-mesh fabric backed by insulation, which latter is also carried under the roof of cement tiles. The cost of the house was $2,750

The steel frame, its members dipped in asphalt, is painted and spot-welded



The steel sash are of a sliding type, with screens outside

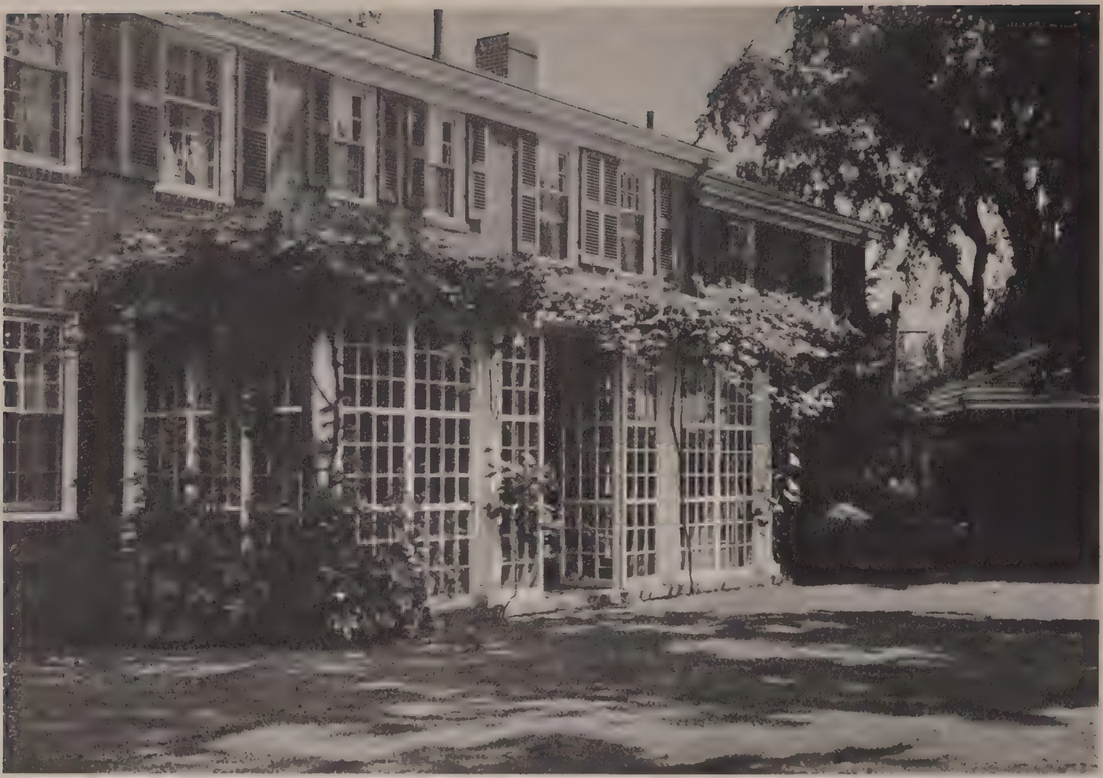


The house is of brick veneer on a wooden frame, the brick used being a common water-struck New England brick laid with a wiped joint of light gray mortar. The trim is wood painted white, with the exception of the blinds and front door, which are dark green. A sea green Vermont slate is used for the roof

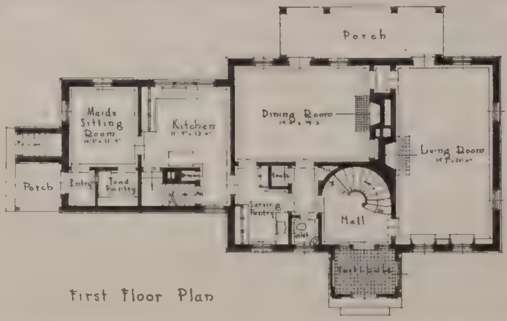
HOUSE AT CAMBRIDGE, MASSACHUSETTS

Howe, Manning & Almy, architects

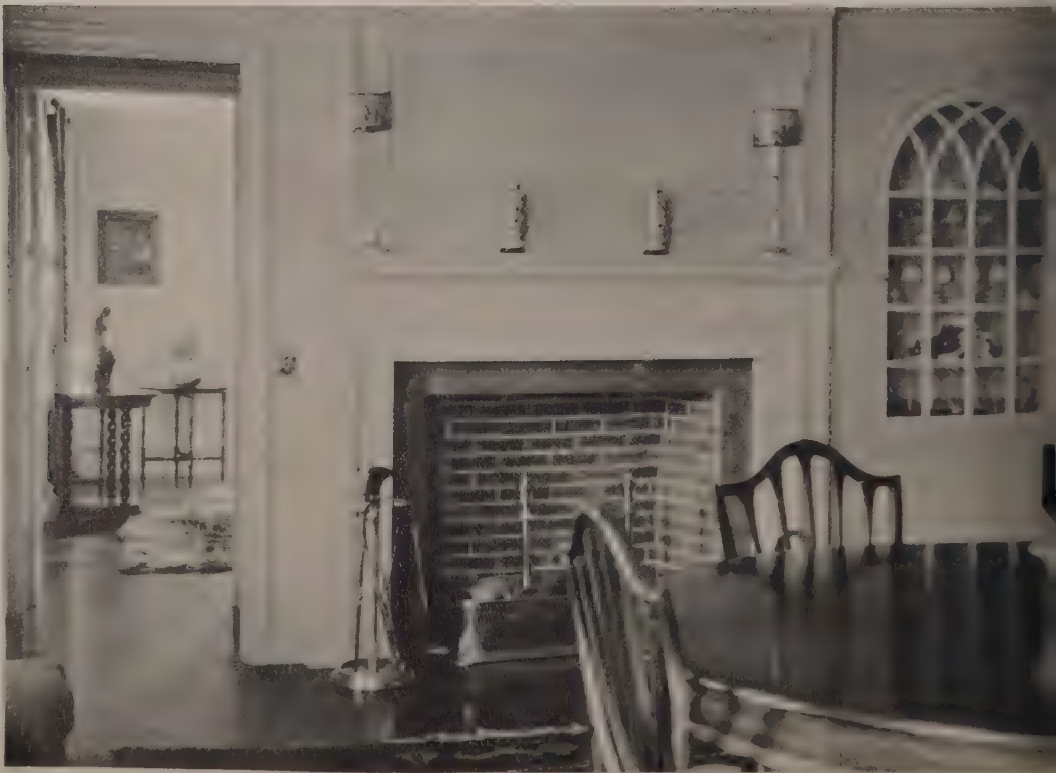
"This house has always been a favorite with me because it so soon assumed the air of having always been in its place and looked so convincingly like an old New England house although there never was any attempt at faking anything."
—Lois Lilley Howe



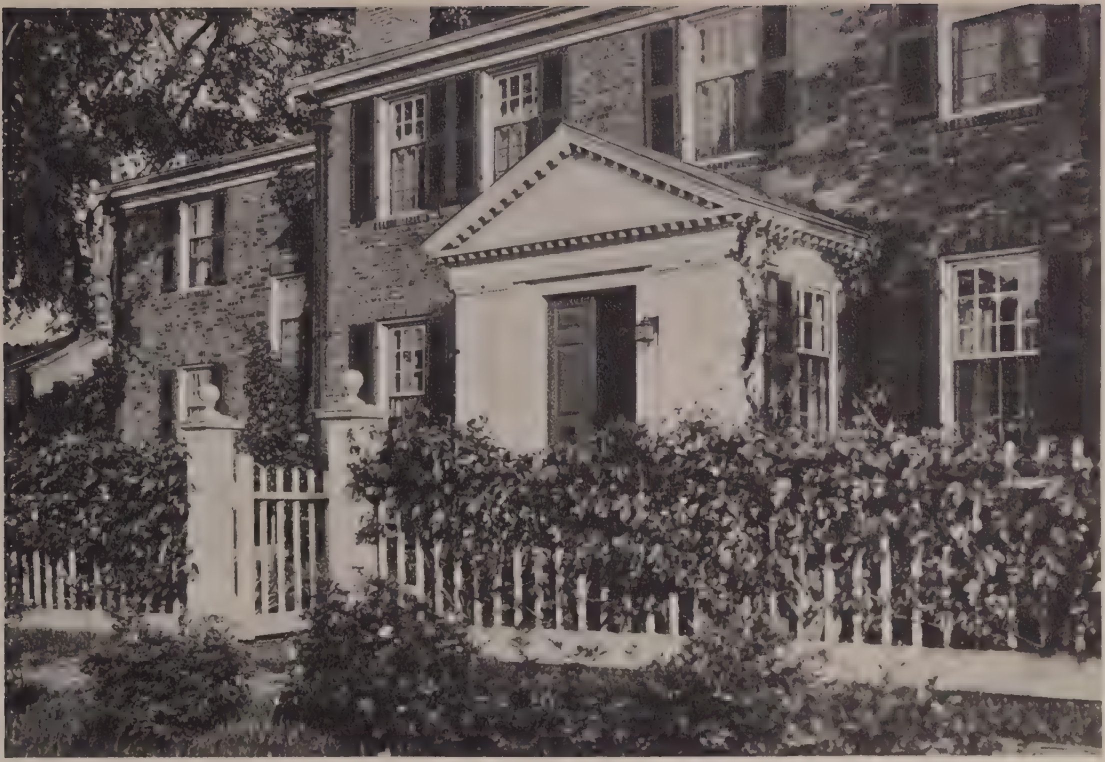
The garden front. Fletcher Steele, landscape artist, located the house on the lot, and in so doing reserved a large part of the area for a garden



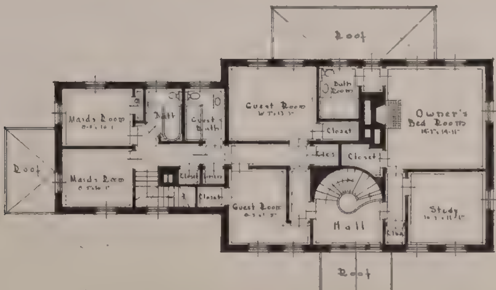
Plan of the first floor. In spite of the comparatively small size of the house, its plan is given real distinction with the semi-circular stairway



In the dining-room the walls are a cream color with white woodwork. There is a brown rug, and the furniture is of mahogany. The mantel is an old one

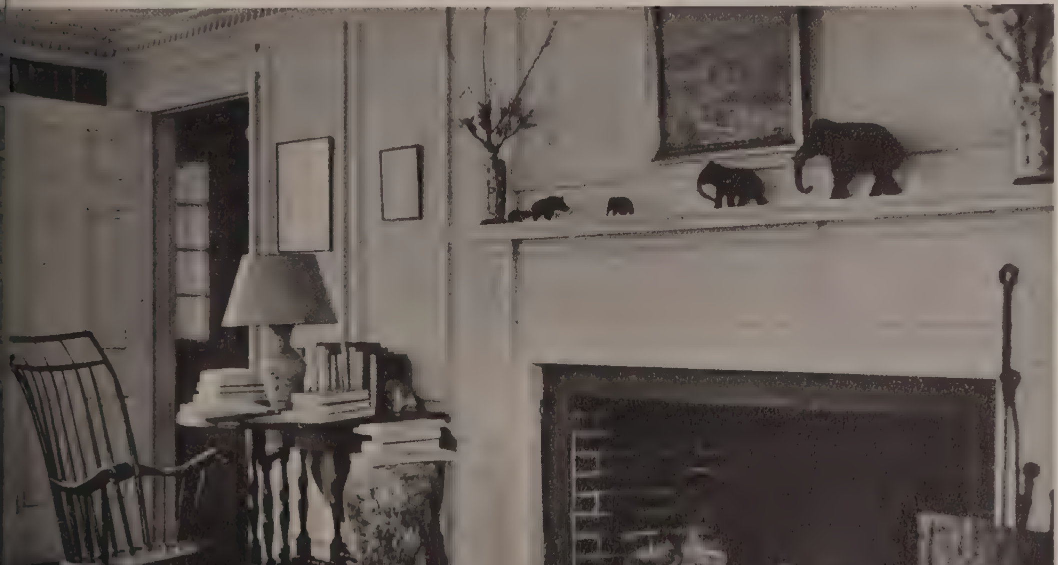


The white dooryard fence contributes its important part to the authenticity of the New England atmosphere, and has been considerably more obscured by planting since the earlier photograph on page 213

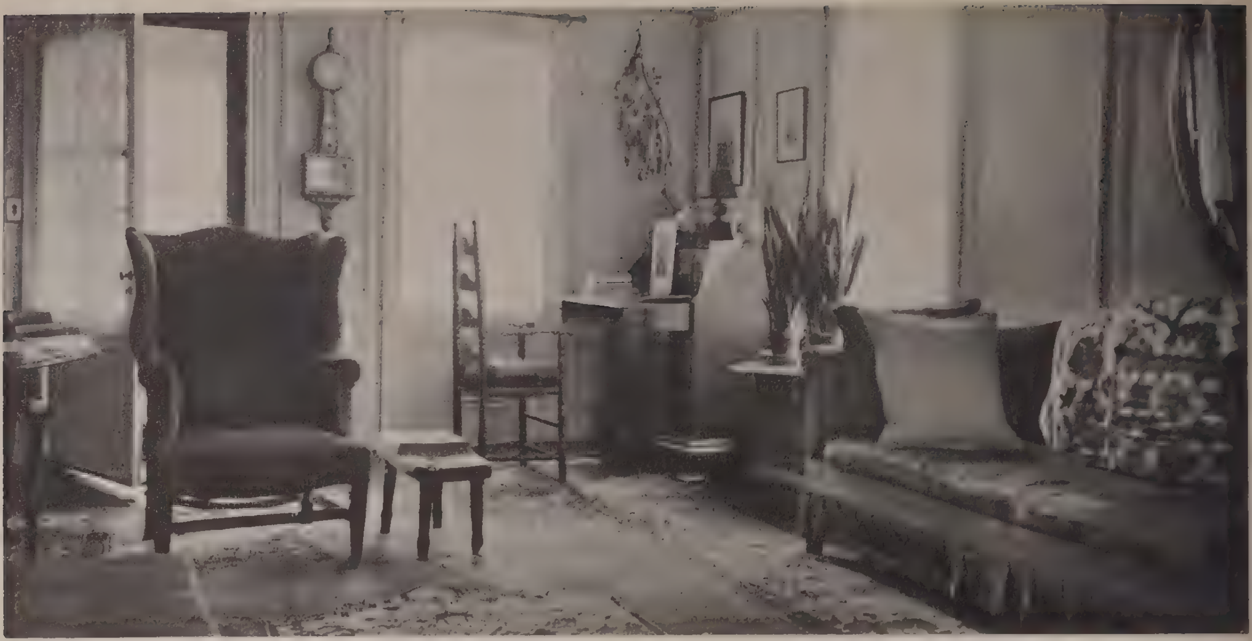


Second Floor Plan

Again on the second floor, the stair hall is developed as an important architectural feature

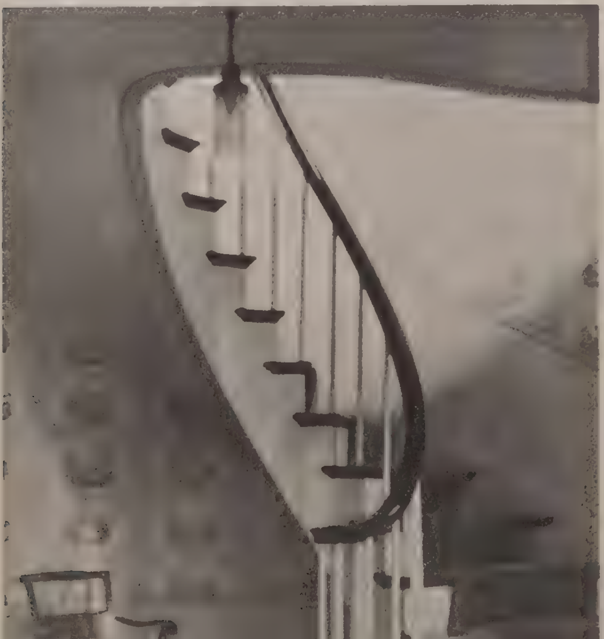


The walls of the living-room are panelled by means of moldings on the plaster. Both walls and woodwork are white. The Oriental rug has a prevailing color of terracotta, which is carried into the upholstery and hangings. The mantel here is also an old one

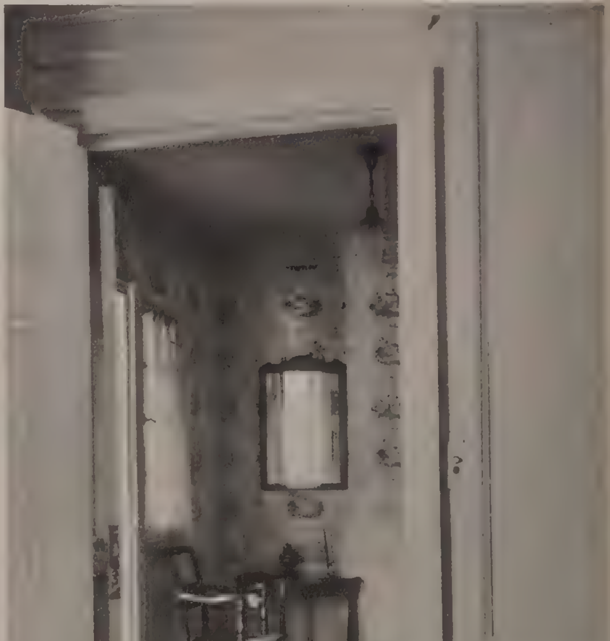


Another corner of the living-room. Blue and white vases on the desk and the gilded banjo clock give accents of color

The semi-circular stairway is very simply detailed

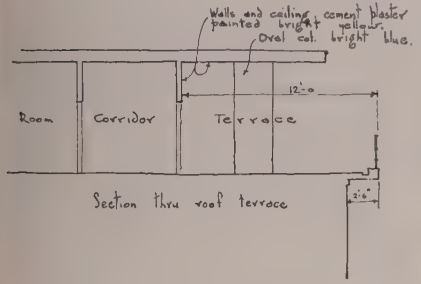


Looking through living-room door to the entrance hall



The Architectural Observer

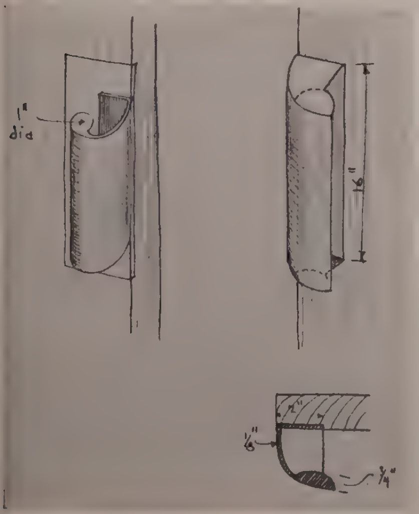
IN London the fire laws require set-backs 12′ in width for stories that are above the height of 100′ from the street. To save some of this loss of rentable area, the firm of Sir John Burnett, Tait & Lorne, architects, have utilized the almost extinct cornice. The top surface of its projection is included in the 12′ required for the firemen, and these worthies, it is hoped will not often have to use the partly covered terrace that the setback affords. The large oval column shown in the section carries all piping for these Mount Royal Flats to the roof, from which gravity flow is employed to reach the rooms.



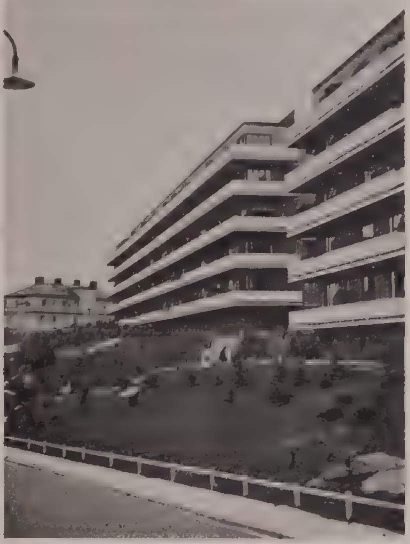
Section thru roof terrace

❖

One would hardly expect to find any radically new form for a doorknob, yet here is an interesting variation of the functional and the decorative. The handles are in white metal on certain doors which need no latch in the Shakespeare Memorial Theatre at Stratford-on-Avon. Scott, Chesterton & Shepherd are the architects.



A Stockholm architect achieved horizontal emphasis by means of color in a rather unusual manner. The balconies on this apartment building are not solid, as they appear, but have an outer railing of substantial wire netting. This is backed by canvas in bright yellow, green, and orange.



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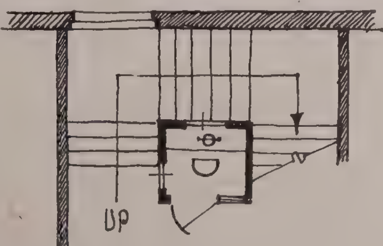
W. M. Dudok has utilized the square well of a stairway as a convenient location for a telephone booth in the Town Hall at Hilversum. In addition to the light admitted through two windows, the interior is made bright by the door, which consists of a single sheet of plate glass in a metal frame, extending from floor to ceiling.



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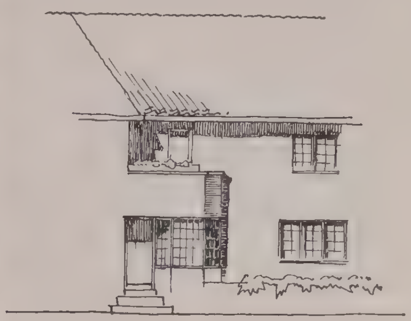
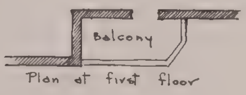
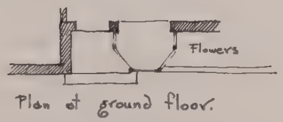
A door that is necessarily located in an interior corner between walls usually affords a difficult problem in design if one aspires to make it attractive. Here is one, from a house in Amsterdam, where the designer has combined a balcony, a small conservatory and the door in a unit composition. The walls are buff brick; the roof, red tile. Steel sash are used in the flower bay and are painted black. Other windows, door trim, and eaves board are of wood, painted cream.







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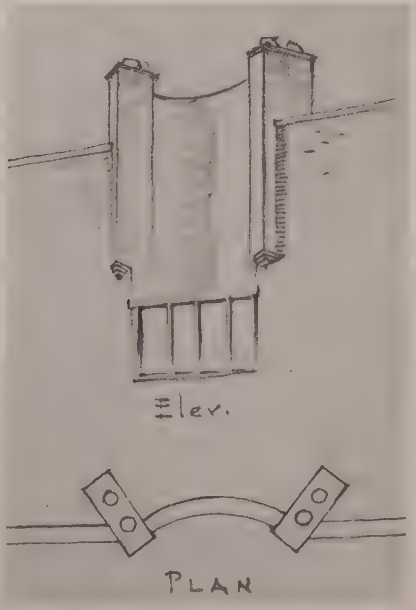
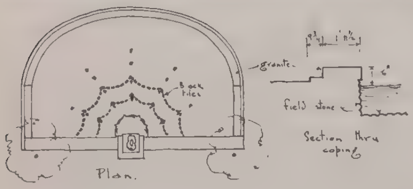
An ingenious use of two adjacent chimneys as a decorative interruption in a long wall is shown by the



accompanying sketch, in perspective and plan. The Observer found this example in Amsterdam and seized upon it as one more bit in the great accumulation of evidence to the effect that the Dutch are masters in brickwork.

❖

There is a most attractive fountain in the court of the Technical School at Stockholm. For the floor and sides of the pool, field stones have been used, in a variety of colorings. Insets of black tile give a sense of structure to the heterogeneous field inside of a coping of granite. The effect of rippling water over the vibrant background is more attractive than the usual monotone of smooth stone or tile.



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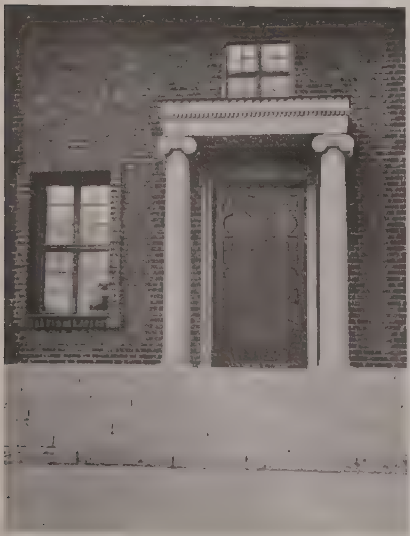
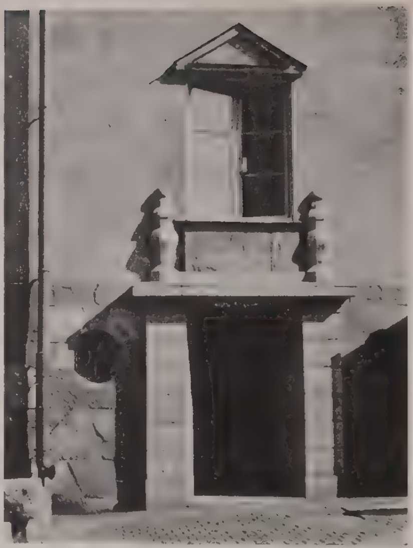
The architects of Stockholm, as most architectural observers have noted, spend a lot of time and ingenuity upon the design of their doorways. Here are two that caught our eye: the first an unusual use of the order upon the entrance to a brick building; the second, another variation of a particularly favored combination of materials—heavy stone with stucco.





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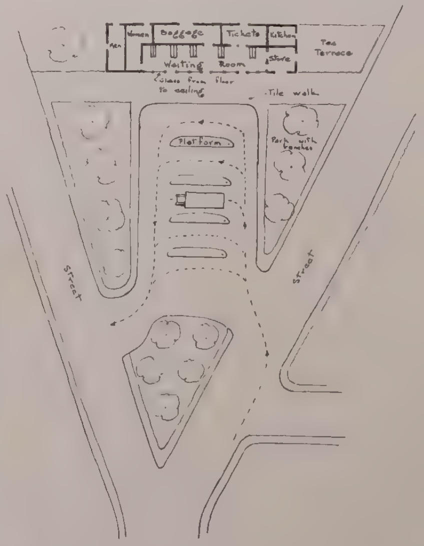
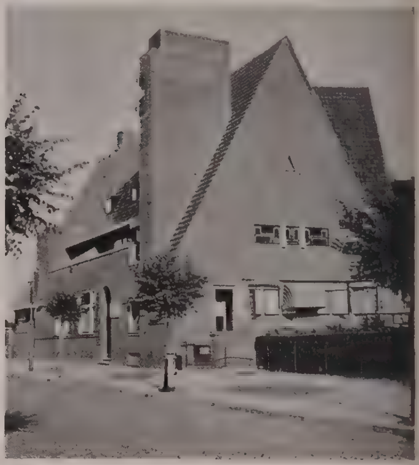
The triangular site has been productive of many headaches among architects. Its difficulties have been overcome and its drawbacks turned into advantages for the bus terminal in Stockholm. The building itself is only one story in height. From the broad tile-paved walk in front of the waiting-room, narrower walks lead around the group of landing platforms.



Roof and chimney, though usually counted upon as effective accents in house design, are not often given the emphasis allotted them in this modern house in Amsterdam. The triangular gable window contributes to the dominance of the steep roof. Note that the brick bond in the chimney differs from that in the walls. The flagpole, so often seen in Dutch work, is reached through a window at the top of a stairway in the chimney.



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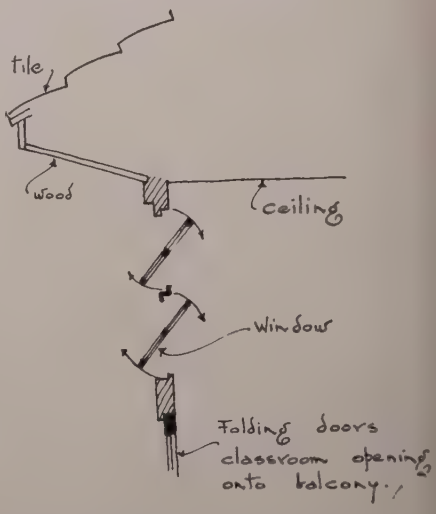
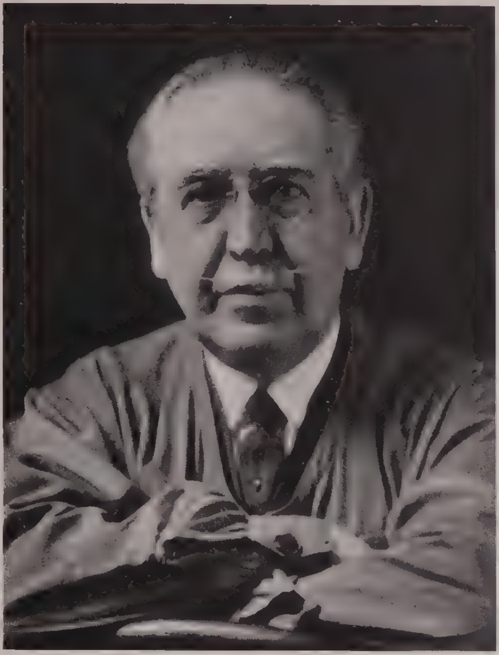
An unusual relationship between the needs for light and for weather protection is found in an Amsterdam school building. The overhang of the cornice is retained, to keep the drip off walls and windows, but the soffit is sloped up to the outside to gain more light indoors. The modern windows, pivoted horizontally, aid in weather protection while assuring ample ventilation.



Harold VanBuren Magonigle, F.A.I.A., A.N.A., D.Arch.: 1867-1935



"WE are here," said the Preacher, "to do honor to our friend, Harold VanBuren Magonigle; to express our appreciation, our hope, our confidence—this is a service of TRIUMPH!"

Surrounded by the friends he loved and by the simple, gorgeous garden-flowers he liked best; accompanied by his favorite Siegfried music and by Dittler's exquisite playing; in Triumph, Van's great spirit went on. What a spirit—what a great spirit!

Van didn't go to Church—he never designed but one Church (as lovely a Church, incidentally, as any one ever did anywhere). But it seemed peculiarly appropriate that his going forth should be from a quiet Church, with the music he loved, the flowers he enjoyed so much, and his friends. For, in the real, profound sense, Van was a religious man. He loved and worshipped a personal "Trinity" of his own—his wife, his Art, his friends—loved with the whole of his great heart and worshipped with that courtly gaiety which was peculiarly his. He hated, too—hated sham, indecision, temporizing and such; hated the current tearing-down and forswearing of Ideals. He knew what is good and fine and loved it; knew what was bad and rotten and hated it. With him, black was black and white was white and there was no middle ground of gray uncertainty, no fence-straddling—nothing of the "Jesuit" about Van.

What a thorough gentleman he was—what an accomplished Artist! Architect, Painter, Sculptor, Writer — blessing each thing he touched, with grace and quality. Such, in brief, was "Doctor Van." The happiest day of my life was that one on which I walked with him up the aisle, in a great University, and presented him for the first Doctorate of Architecture ever awarded in the United States. That was the day he became "Doctor Van," and the music that day was the same triumphant Siegfried music that he loved. He graced his degree as he graced Life itself.

What a grand gay fellow he was! I shall never forget the day he showed me his paintings—all of them—with a sort of boyish glee and a gay little story with each one. "You know," said he, "I don't show these to many people; I like them too well." One of them, which I was so careless as to enthuse about, particularly, hangs above my desk and illuminates my humble office. That "Magonigle Blue"—do you know it? Nobody else ever matched it.

Van was one of the very few Architects who could—and *did*—take a job all the way through from mounting the first paper stretch to turning over the keys of the finished building; sketches, working-drawings, specifications, details, models—all "the works," and *his own work* too. The Schools don't make Architects of Van's sort. Nature does—occasionally—not often.

Indicative of the "democratic Aristocrat" we loved, was the group that gathered at that service of Triumph on September third. Some of the greatest men in the Arts shared their sorrow with Eric and Lester and Jovan and John and Chester—the five "boys" who had most lately worked under the beloved "Chief." Aristocrat, did I say? Van was that, if ever man was—gentle, courteous, generous and cultured; a gentleman. If you would read about Van, read Cardinal Newman's "Definition of a Gentleman"; if you would sense the gentleness of him, read the latest little book from his happy pen, "Four Pantomimes," made for the dear Lady whom he loved and worshipped at the Head of that personal "Trinity" of his.

A great spirit has passed on; Architecture has lost its brightest light (if such lights *can* be lost) and many of us have lost a very precious friend. But—as Lee Lawrie has just written me—"VanBuren Magonigle was one of those large-scale human beings that one doesn't forget because they die. I am sure of that."

No! One doesn't forget!

Harry Francis Cunningham

The Reflecting Pool

Edwin Bateman Morris

A WHILE ago the cheerful Leicester Holland, of the Division of Fine Arts of the Congressional Library, prepared to take a vacation, and promulgated the very pleasant axiom that on the eve of vacation-taking one should entertain a group of friends at dinner. He, therefore, gathered about him a number of pleasant but architectural souls and invited them to a non-existent Chinese restaurant whose name and location happened to remain in his remarkably retentive memory from some previous incarnation, existence or span of life.

By dint of visiting all the known Chinese restaurants in the District of Columbia, however, the pleasant but architectural souls at length discovered the cheerful Holland standing in front of the establishment he had had in mind all the time.

The feast was very architectural. It was elusive, having that evanescent quality, that straining of imponderable thought to express itself in ponderable materials which is the essence of architecture and of Chinese food. There were these poetic Oriental philosophies, set forth in curious platters built up in a bewildering culinary syntax of bamboo, birds' nests, feathers, old-time eggs and the like.

Innocently we placed an order for a white wine. Holland, who knows everything, explained that there was a white wine and a red wine, both made from matting. Furthermore, he explained—and being in the library his voice naturally carries nothing but facts—that the white wine is made from fresh matting and is colorless, while the red is from used matting and must therefore be tinted by reason of the improbability of it ever being white.

This white wine was not a wine in the true sense of the word. It had a high modulus of rupture, a tremendous compressive and tensile strength. Lorimer Rich intimated that half a jigger of it poured on a four-inch I-beam would so awaken the consciousness of the beam that it would hold up several stories of masonry wall over an almost unlimited span.

Bill Foster and Victor Abel, being extremely practical, were inclined to doubt that, but they thought the fluid would be very useful for deep carving on granite in lieu of the sand-blast.

Bessell, who comes of a hardy race of Vikings, seemed scarcely to notice the corrosive quality of the beverage and drank it absently. Two drops each upon the tongues of the others, however, revolutionized the whole trend of architectural thought for them. Rich and Stanley-Brown and Foster envisioned buildings designed in the Chinese-Chippendale vein or, more superlatively, the Chinese-Heppelwhite, a new style yet to be evolved. Nothing came of it, however, and the Chinese influence on the modern theme flickered low and expired.

❖ ❖ ❖

A WHILE ago I was discussing with a fellow architect that glorious part of architecture which is expressed by proposals from contractors covering costs of changes thought up by the architect after the building is in progress. There lay upon the table a little sheaf of these poison-ivy love-letters.

"That," I was moved to remark, "represents a low batting average."

My mentor corrected. "That's the English method. Design your building as you go along. Meet each exigency as it arises in the physical growth of the building and solve it then and there. It promotes a close and loving touch with actual architecture."

The method caused me to complain, as being too luxurious and breakfast-in-bed-ish. Architecture is a Spartan thing. It is taught and drummed into its students in the still watches of the night when the rest of the world is easily sleeping. It is developed by the students in offices through tedious years of learning to adjust æsthetics to stubborn materials, to I-beams, to plumbing pipes, to flashings and roof drainage, to difficult engineers, to specification writers lacking in imagination (*i.e.*, to specification writers), and to the pale illogic of clients.

An architect therefore should be predominantly masculine. He should proceed on a straight understandable line to his goal, without feminine and temperamental uncertainties and changes of mind.

It used to be that architecture revolved around an East Windsor tie, a pointed beard and a set of afternoon-tea adjectives with which to describe the abstractions of architectural design. Fortunately we have moved upward and onward from that. Architects now buy their neckties in ordinary stores. And the modern urge to omit foliage and excess ornament from buildings has reached the facial planes of the architects, who use safety razors just like brokers and big-bore executives.

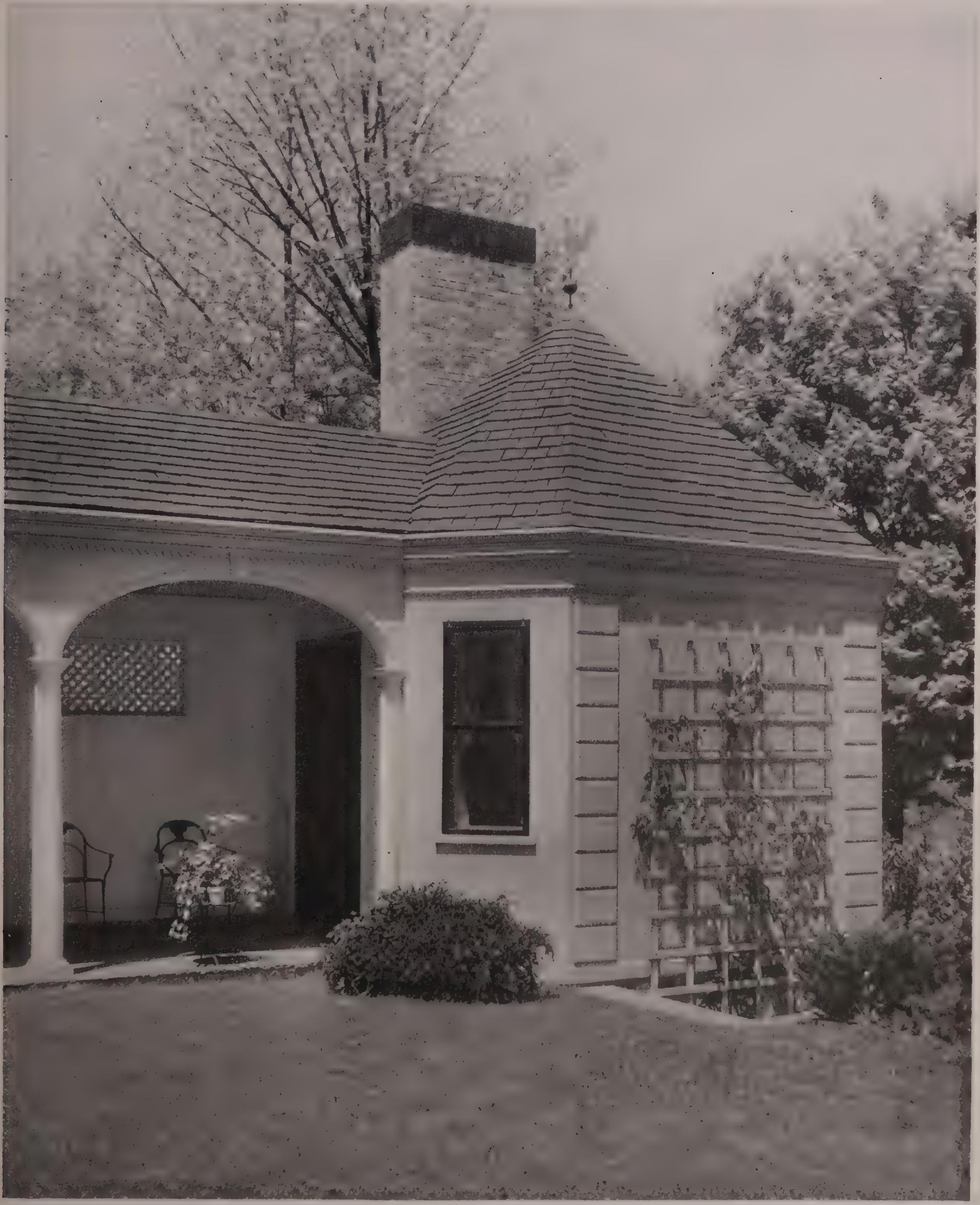
In fact when you see an architect now he looks human and natural and at his ease. He does not have on an arty expression and a pair of corduroy pants. He is educated to regard the dignity of his profession and to be proud of the fact that he no longer says in an inspirational way, "Oh, dear, let's do it this way," but proceeds with logic from step to step so that his final result is explainable and understandable.

He strives now to draw steel sash, not in the way he hopes they can be constructed but along lines of possible fabrication. He uses terra-cotta and tile and lead and aluminum with an understanding of their physical properties. He does not design drawings but buildings. The lines on his linen sheets represent an actual creation in the round.

Therefore the architect at his best is not surprised by the happenings during construction. He is not confused and obfuscated because the loving designs he has made prove not to be constructible by the hand of man. He is not compelled to rush post-haste like a fire chief to the scene of action to find out how much the contractor will charge to deliver a set-up that is both practical and architectural, in place of the one that is only architectural.

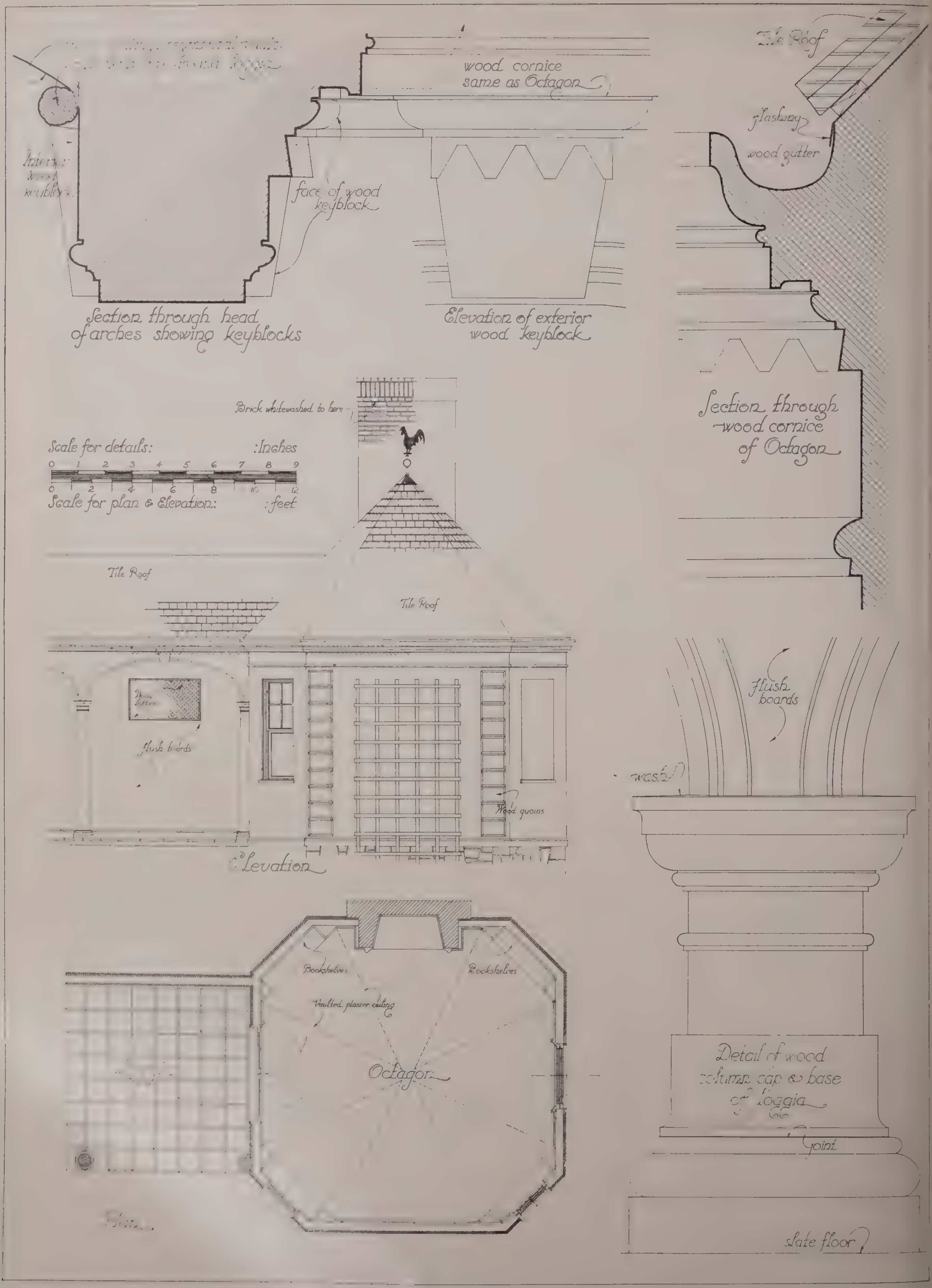
The architect is greatest who builds his building twice—once in his imagination and once in reality—and the nearer the two processes coincide, the greater he is. We cannot put a ban on the method of achieving architecture by the process of proposal and change, but let's frown upon the idea that that method is the only one by which an architect can express his temperament and soul.

FAVORITE FEATURES



Many of the architect's creations fail to measure up to his expectations. Here is one of a series, however, that satisfy, in a measure, the designers themselves
(*Scale details overleaf*)

"The Octagon,"
House of Philip M. Brett, Greenwich, Conn.
WILLIAM DEWEY FOSTER
ARCHITECT



(*See overleaf*)

The Editor's Diary

Thursday, August 1.—Following somewhat along the way that Ely Kahn's recent book, "Design in Art and Industry," pointed out, the A. I. A. has come out in favor of the establishment of artists' workshops with the idea that these may "redirect the talents of artists into channels more tightly meshed with the economic machinery." Mr. Kahn is the chairman of the committee which proposes to provide centers for artists and craftsmen, to design and produce useful art objects. These centers would afford space and opportunity for training, creation, production, and distribution. While the scheme is prompted at the moment by the desirability of relief measures—and it may be carried out under the Public Works Relief Bill—it is hoped that it will initiate a more important and lasting benefit—the establishment of a tendency toward removing artists permanently from the luxury class. America spends millions to educate its artists, but society at the moment provides no effective outlet for their abilities when these have been established.

Each workshop would be staffed with an executive head, six competent instructors, approximately fifty artists and craftsmen, an assistant director in charge of sales, and a small clerical staff. The artists and craftsmen would receive fifty dollars a month, while ten thousand dollars would be appropriated for materials, in addition to other necessary moneys for instructors, sales expenses, and contingencies.

Saturday, August 3.—The extension of Congressional activities far into the hot summer of Washington seems to arouse a lot of undeserved sympathy. As a matter of fact, most of the more important Government buildings are now air-conditioned, so that the congressman from home is working in an office that is probably far more comfortable than the weather he will meet with in his apartments after hours or at his home among his constituents. A contract has just been placed for the air-conditioning of six of the seven floors in the Department of the Interior Building, at a cost of approximately one million dollars. Not that the seventh floor has been neglected, for it was air-conditioned last year.

Monday, August 5.—We are rather accustomed to thinking of Federal aid in housing as a brand-new idea—one of the steps slightly to the left in the nation's march. Now it so happens that the old Corlears Hook district, one of the worst slums in New York City, is to be razed through the efforts of the East Side Chamber of Commerce. Curiously enough, the original financing of home construction in this territory was also accomplished with Federal aid. "The Commissioners for Loaning Certain Moneys of the United States in the County of New York," were custodians of funds deposited by the Government under a Federal loan act passed to stimulate construction in 1836. Now, nearly a century later, the district is to be reborn with Government aid.

Wednesday, August 7.—We were under the impression that the architectural profession was represented in political life by only one mayor, James R. Law of Madison, Wis., and made mention of that fact in the Diary. Francis W. Kervick of Indiana, however, tells us that there is at least one other, Colonel George Freyermuth, mayor of South Bend. Mr. Freyermuth was in practice for many years until his election in 1934. The "Colonel," by the way, is not merely an honorary title, for he won it in military service during the war. Perhaps the profession is still more widely represented in mayoralty chairs.

Friday, August 9.—I am surprised to see my good friend Magonigle coming out in favor of the proposed alterations to the national Capitol. Everything he says in *Pencil Points* for August regarding the defects of the Capitol may be, and probably are, perfectly true. Nevertheless, if each generation were to set out not only to create its own masterpieces, but to improve all those left to it by preceding generations, the results would be, to say the least, unfortunate. If architecture is, as most of us agree, a true graphic record of civilization, what is the point in altering the record of the past as we go along? It seems to me that we have enough troubles of our own to create really enduring monuments, without attempting to better those created by our far-distant predecessors.

Saturday, August 10.—Considering the stress that was laid on modern housing types in the recent G. E. Competition, it is particularly interesting to notice G. E.'s announcement that a company, Houses, Incorporated, has been organized "to co-operate with others in the development of houses of any type which seems worthy and promising; to conduct research work; and to assist in the management and financing of such enterprises." Moreover, G. E. goes on to say that it "has not been, nor will Houses, Incorporated, be, the proponent of any particular type of construction enclosure, whether it be pre-fabricated, partly pre-fabricated, or the traditional enclosure." All of this is particularly interesting and welcome news, more so because of our regretful feeling that with its recent competition, the company had determined to exploit the so-called "international style" as the proper envelope for a house of today.

Monday, August 12.—It is hard to prevent people from doing utterly selfish things—perhaps so hard that it is scarcely worth trying. Take the case of the man who has been accustomed to the earnings of a skilled architectural draftsman. He has been forced to obtain work on a Government project at a nominal rate of pay and with few hours of work a week. The upturn brings a call from his former employer to help with a rush job, who offers him the rate, or a very slightly higher rate, than he is now getting on relief job.

This is not an isolated case, unfortunately, but something that is happening, to our definite knowledge, in New York, Boston, and elsewhere. An appeal to the employing architect's sense of fairness, I am afraid, has little effect. The man who would heed such an appeal would not have followed such tactics originally. What is the cure?

Wednesday, August 14.—Lunched with Albert Mayer, recently back from the Conference on Housing in London, which seems to have been the outlet for a number of carefully prepared papers which will probably find their way into the files, and gradually dry up. This Conference, like most of those that we have had in this country, is productive of a lot of talk and some inspiration to those few architects who attend them, but they do not move the world very much further ahead.

Friday, August 16.—Alexander Papanastasiou, twice premier of Greece, dropped in at Detroit the other day to meet the city's fifteen thousand Greeks. Here is the way we look to a modern Greek: "Everywhere I look I see Greek architecture. I think the buildings in Washington especially beautiful."

Saturday, August 17.—Since the tragic death of Will Rogers, the taboo seems to have been called up relating to the release of motion pictures after an artist's death. An unwritten law of Hollywood is said to be that with a leading artist's death his pictures become worthless. Of all the relics of superstition that remain with us, this is one of the most absurd. In book publishing we scarcely think of withdrawing an author's works after his death. Any form of art expression that is really worthwhile is independent of time or place. It seems quite likely that if the motion picture industry frees itself of this taboo, the pictures in which Will Rogers appeared will in the future be enjoyed by far more people than during his active lifetime.

Monday, August 19.—Dean Emerson is introducing a new element into the first-year course of Massachusetts Tech. The first-year students will design and build a house, starting with the selection and purchase of a lot, making plans and specifications for a house of moderate size, selecting a contractor, and then watching every detail of construction. When completed, it is hoped to sell the house, and use the proceeds to start the cycle again next year. It sounds like a real scheme for bringing the student into touch with the realities of architectural practice.

Wednesday, August 21.—The planning movement steadily gains headway—planning with regard to our cities, counties, states, and nation. Several years ago New York made its famous Regional Plan, but little has been done about adopting a specific program. The New York Chapter, A. I. A., through its Committee on Civic Design, now comes out for a strong and fearless City Planning Board, with the power and technical ability to plan New York. This is no longer another of those beautiful dreams of beauty and the perfect state, but rather a measure of self-protection against the results of decreasing collections, the onward march of cancerous blight, and at least the threat of municipal bankruptcy.

Thursday, August 22.—The State of Wisconsin recently printed a study of the State's resources, its fiscal and economical background. Here is long-range research and planning on a statewide basis. The people look over this geographical background, their population growth, employment, relief, education, health, recreation, their water and mineral resources, the conservation of their lands, game and fish, their power and transportation facilities—the whole picture. Upon the basis of these facts they plan a twenty-year program for public works, highways, and the best uses of their natural gifts. With such a broad-minded approach and the evidence of a determination to face facts, it is hard to see how any state could move other than forward toward the greater good of the greater number.

Friday, August 23.—The period of light summer reading is almost over for the year, which is unfortunate, for I have just finished one of the most delightful pieces of printed entertainment that ever helped to while away a midsummer day. The book is called, "Hearings Before the Committee on Public Buildings and Grounds, House of Representatives, on S. 1129, to Provide for the Extension and Completion of the United States Capitol." Usually a title as heavy as this would indicate a somewhat ponderous text. Such is not the case here. It is a delightful picture of architects and laymen at talk. They are discussing a subject on which no two of them apparently agree in all details. The plot concerns itself with the question of altering and enlarging the work of Thornton, Latrobe, Bulfinch, and Walter on the east front of the Capitol. It would be unfair to disclose too much of the plot, the dialogue, and the discussion, for this is a book that every architect will want to read for himself. I can promise you that it will well repay time spent upon it.

Curiously enough, in the battle between those who would enlarge and improve the Capitol, and those who would leave this historic monument to speak from the past, age, dignity, and authority are ranged on one side, with youth and sentiment on the other. It is a curious division, for one usually expects youth to have less regard for the past and more desire for progress and change. Nevertheless, we find men like Charles Moore, Egerton Swartwout, John Russell Pope, H. Van Buren Magonigle, and C. C. Zantzinger working for changing the building—no two agree just how—while on the side pleading some consideration for sentiment, affection, and respect for the work of great architects now dead, are men of the younger generation like Leicester Bodine Holland, Lorimer Rich, Eric Kebbon, Thomas Ellett, Earl H. Reed, Seymour Williams, Ralph Walker.

Monday, August 26.—Some statistician, of which we have plenty these days, has figured that of approximately 775 hours in the present session of the House of Representatives, a total of 118½ hours was consumed in roll calls. The Swedes do this thing very much better. They have an electric signal device by which each member votes from his desk, and the votes are instantly recorded. With all our vaunted efficiency and scientific adroitness, we occasionally find ourselves still in the horse-and-buggy days.

Tuesday, August 27.—Childe Hassam died today at the age of seventy-five. Thus ends a brilliant career of fifty years, which has added greatly to the treasure store of American painting. Accepted by traditionalists and modernists alike, Childe Hassam concerned himself not at all with schools and theories and philosophies, but strove always to paint light and color. Coming upon one of his paintings on the line in any exhibition is like stepping outdoors into the sunlight. Childe Hassam, as a man, was a mixture of tireless energy and fearless candor. He damned the public for dancing to the tune of the Parisian studios—and it honored him and bought his paintings. He ridiculed the dealers in paintings—and they bestowed upon him their medal. The critics, with the exception of Royal Cortissoz and Elisabeth Luther Cary, he called dolts, asses, dullards—and they seldom had other than praise for his work in their writings.

Thursday, August 29.—Van Buren Magonigle today passed over to the higher ground. This world will not soon again look upon an artist of his stature. Architect, painter, sculptor, writer—here was a brother to Michelangelo. So thoroughly imbued was he with a sense of the beautiful that beauty flowed out in whatever form of expression he chose to employ. His brooding, sphinx-like creatures of stone at the base of the Kansas City Liberty Memorial mark an achievement in sculpture that any sculptor might well be proud to have carry his name down to posterity. His paintings seem as yet known to a comparatively small circle, but they have—every one at least that I have seen—the enduring essence of a great art, the clear expression of a mood of nature rising above the brush, oil and pigment used to create it. His later writing, in its informal, effervescent nature did not, I think, represent the power that he formerly brought to the task of expressing his thoughts in words. Of a distinctly higher type were some of the papers he wrote to read before the Chapter, The League, or some other body of his contemporaries. These writings were suave, polished, rapier-like in wit and satire. Therein, in his choice of words, his turn of a phrase, his orderly march through analysis and reasoning, he was as much the master of his metier as when building in stone and bronze. Nor was he dependent upon the written word, leisurely prepared, carefully thought out in advance, for in the impromptu speech, or the rapid-fire debate, he was a foeman to be dreaded, an ally eagerly sought.

Doctor of Architecture, master of the brush, the chisel, the spoken and the written word; mentor, critic, patron and friend, hail and farewell.

Friday, August 30.—It is a wonder some statistician has not figured out the length of electric cord being sold through the five-and-tens and the house-furnishing departments. Certainly, if placed end to end, it would enwrap this old world to resemble a ball of yarn in the knitting basket. Every once in a while some apartment-house owner starts to clean out the accumulation of cord that has been installed—in a manner of speaking—by his tenants, and usually a large truck or two is required to remove it. C. A. Abbott, a consulting electrical engineer, was showing me today an ingenious scheme for extending installed wiring by means of a continuous circuit in square tubular form which is cemented to the wall along the line of the picture molding or the baseboard. On this circuit one can place a convenient outlet at any point without cutting the wires. Or one can drop a decorative pendent or two from above to flank a chimney-breast, perhaps, or to hang alone somewhat as would the bell pulls of a former day. Moreover, the outlet installed, having lost its usefulness by reason of the moving of furniture, is moved to a new location. All this is not for the further amusement and activity of the layman, but is an electrician's job.

NUMBER 108 IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF WINDOW HEADS

(EXTERIOR, ARCHED)

Subjects of previous portfolios are listed below at left and right of page

1926
DORMER WINDOWS
SHUTTERS AND BLINDS

1927
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

1931
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS

Below are the subjects of forthcoming Portfolios

Unusual Brickwork
NOVEMBER

Shutters and Blinds
DECEMBER

Fireplaces
(MEDITERRANEAN TYPES)
JANUARY

Pediments
FEBRUARY

Balcony Railings
(INTERIOR)
MARCH

Gothic Buttresses
APRIL

Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication date.

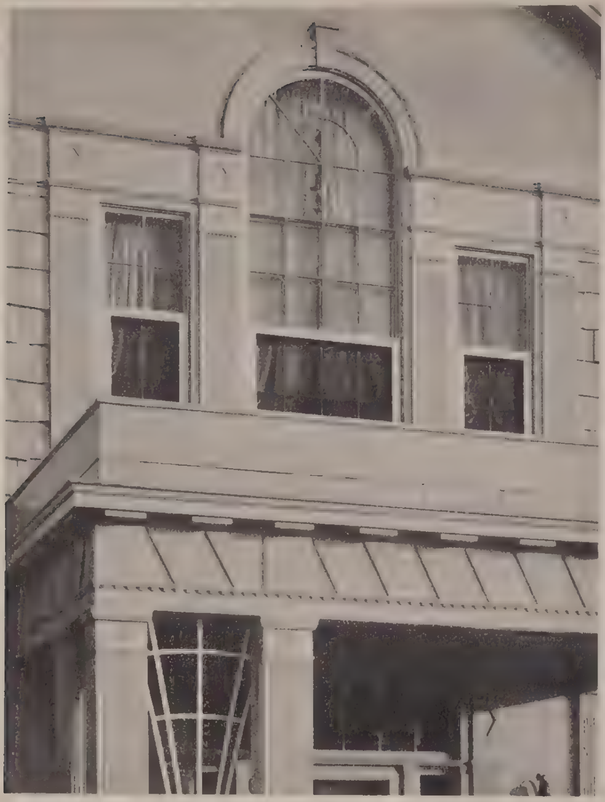
1931—*Continued*
ALTARS
GARAGE DOORS
MAIL-CHUTE BOXES
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS
PARAPETS

1932
RADIATOR ENCLOSURES
INTERIOR CLOCKS
OUTSIDE STAIRWAYS
LEADED GLASS MEDALLIONS
EXTERIOR DOORS OF WOOD
METAL FENCES
HANGING SIGNS
WOOD CEILINGS
MARQUISES
WALL SHEATHING
FRENCH STONEWORK
OVER-MANTEL TREATMENTS

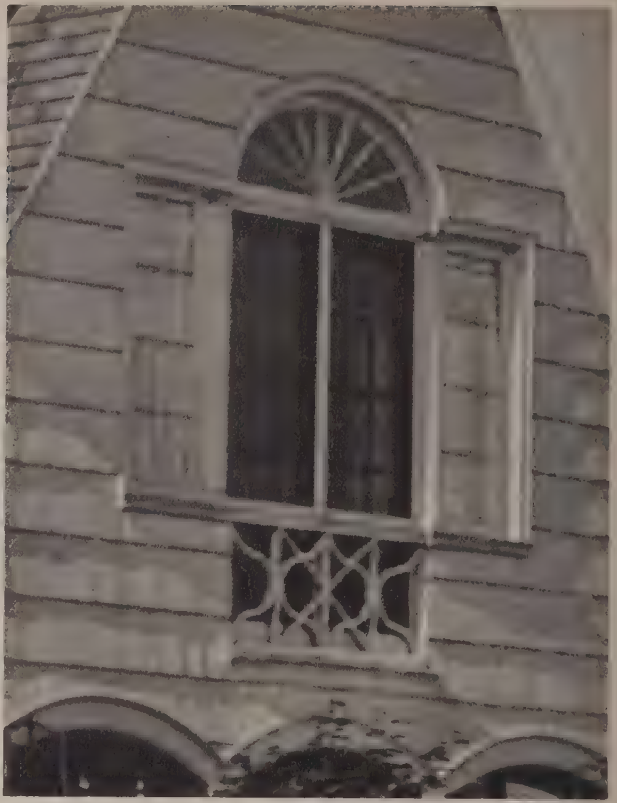
1933
BANK SCREENS
INTERIOR DOORS
METAL STAIR RAILINGS
VERANDAS
THE EAGLE IN SCULPTURE
EAVES RETURNS ON MASONRY GABLES
EXTERIOR LETTERING
ENTRANCE DRIVEWAYS
CORBELS
PEW ENDS
GOTHIC NICHES
CURTAIN TREATMENT AT WINDOWS

1934
EXTERIOR PLASTERWORK
CHURCH DOORS
FOUNTAINS
MODERN ORNAMENT
RUSTICATION
ORGAN CASES
GARDEN FURNITURE
WINDOW HEADS, EXTERIOR
SPIRES
BUSINESS BUILDING LOBBIES
ROOF TRUSSES
MODERN LIGHTING FIXTURES

1935
CIRCULAR WINDOWS, GOTHIC AND ROMANESQUE
TILE ROOFS
MOLDED BRICK
DORMER WINDOWS
ENTRANCE SEATS
OVERDOORS, INTERIOR
BRICK CORNICES
SIGNS
CHIMNEY OFFSETS

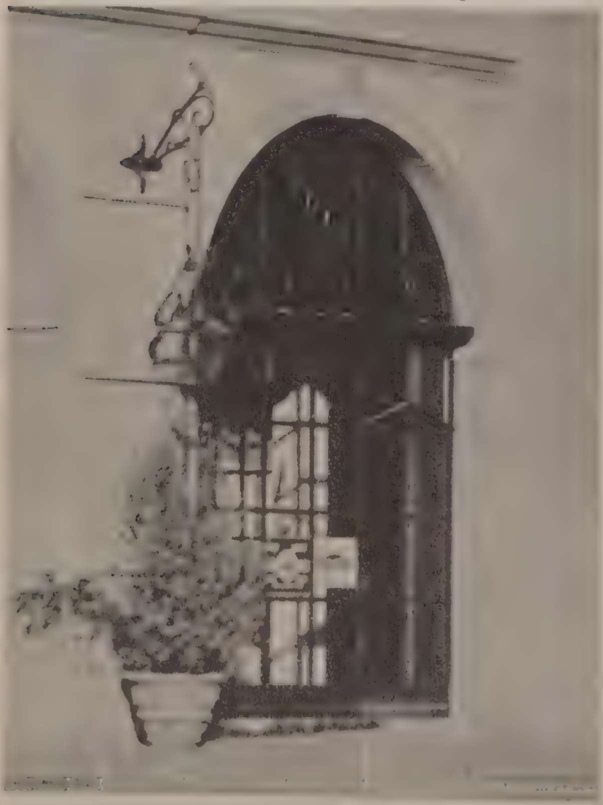


Country house, Long Island
Aymar Embury II

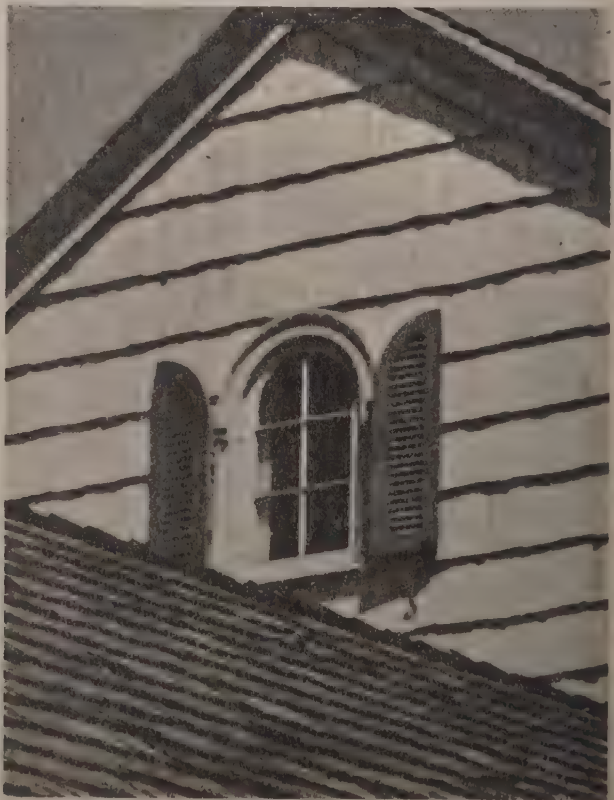


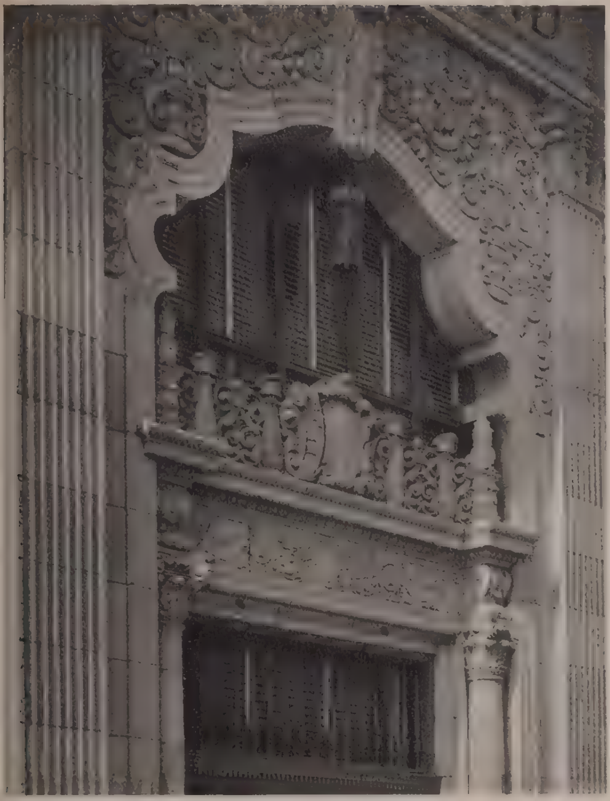
Country house, Long Island
Electus D. Litchfield

Newspaper office, Los Angeles, Calif.
Meyer & Holler

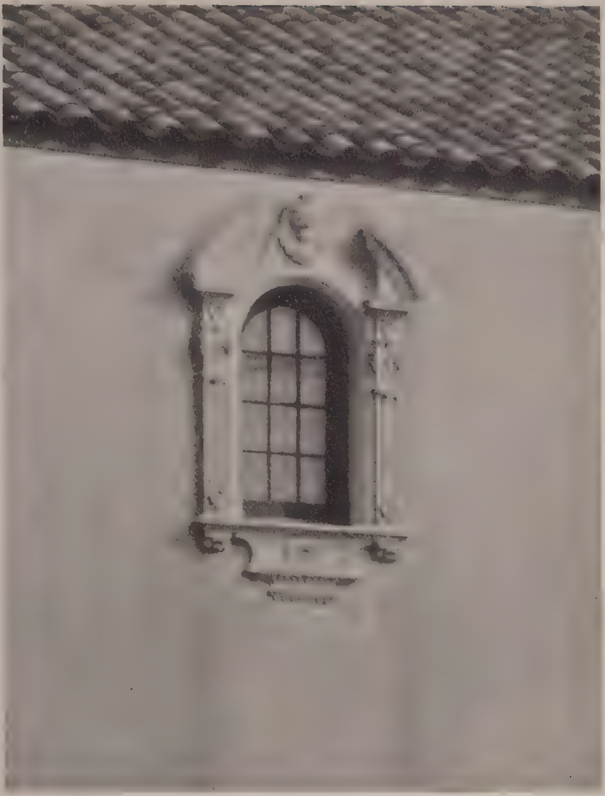


Country house, Long Island
Dwight James Baum



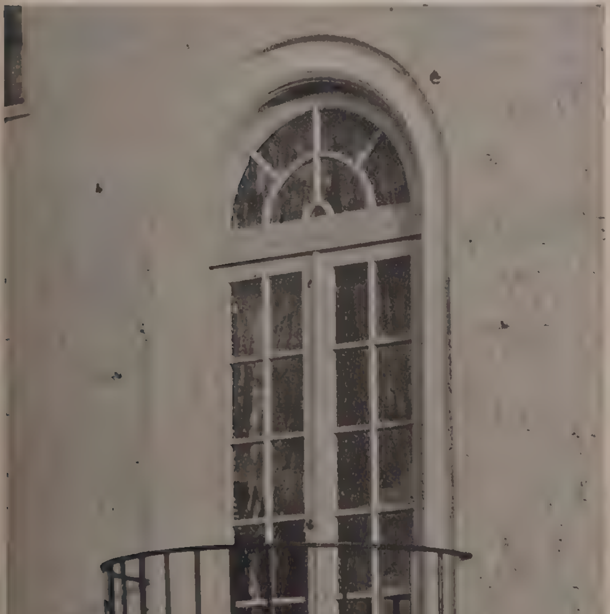


Office building, San Bernardino, Calif.
Dewitt Mitcham

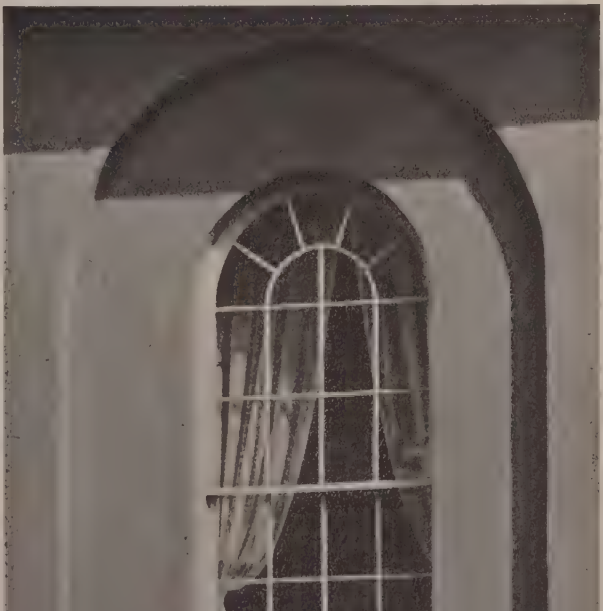


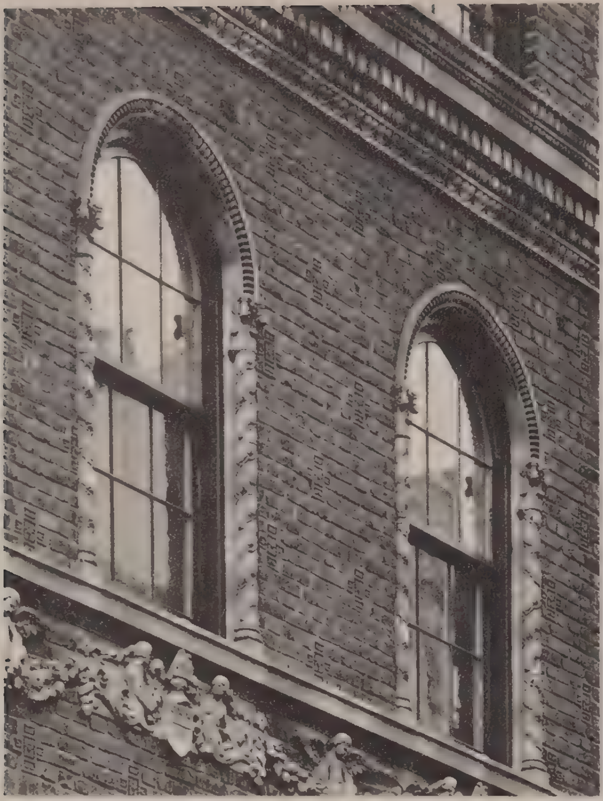
Municipal Building, Dallas, Tex.
Lang & Mitchell

Country House, Richmond, Va.
W. Duncan Lee

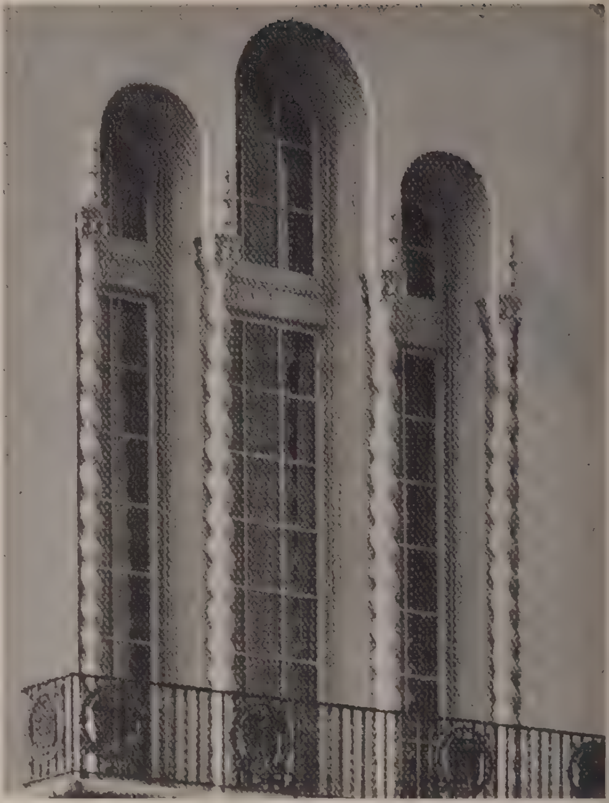


Arlington, Alexandria County, Va.
George Hadfield



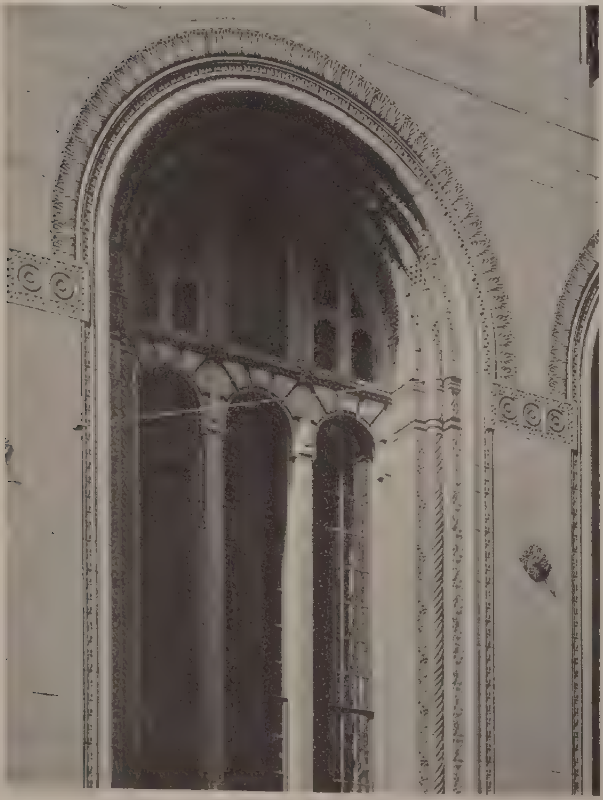


Hotel, New York City
Rouse & Goldstone

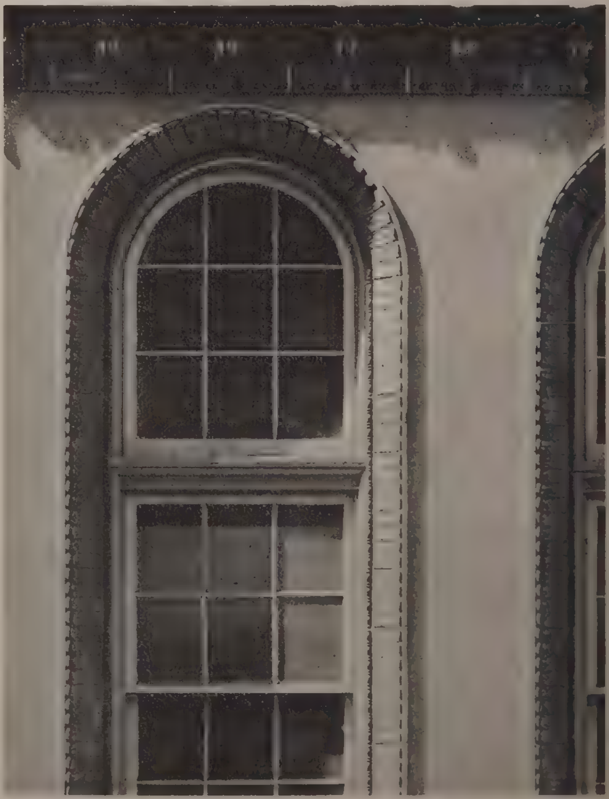


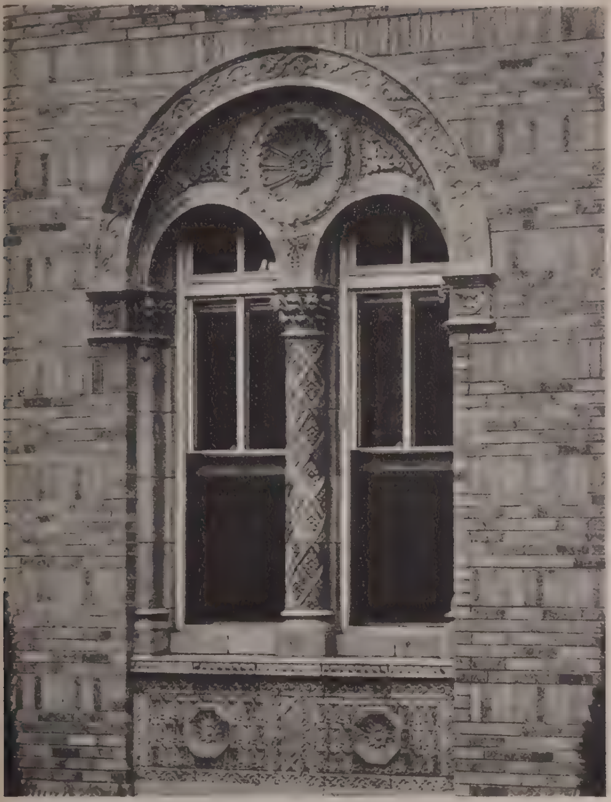
Residence, Los Angeles, Calif.
Henry Harwood Hewitt

Office building, Grand Rapids, Mich.
Smith, Hinchman & Grylls

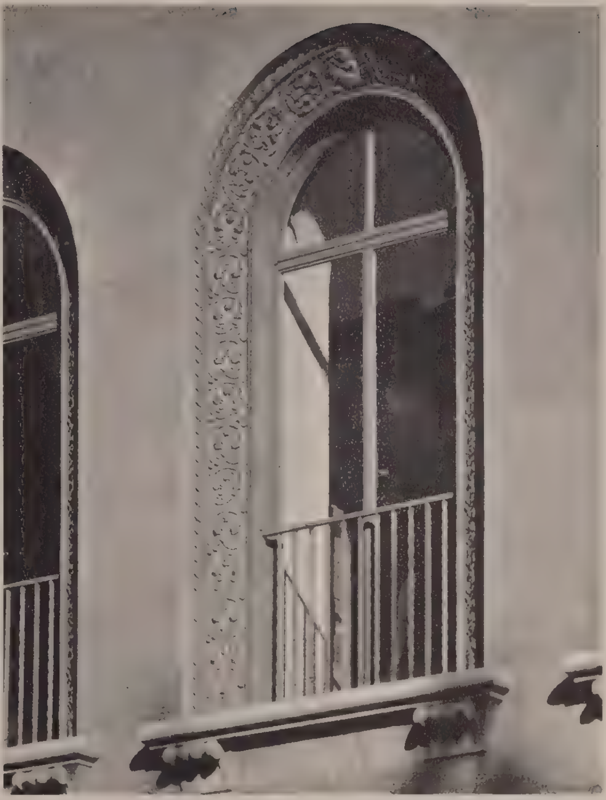


Office building, New York City
Frederick Mathesius, Jr.



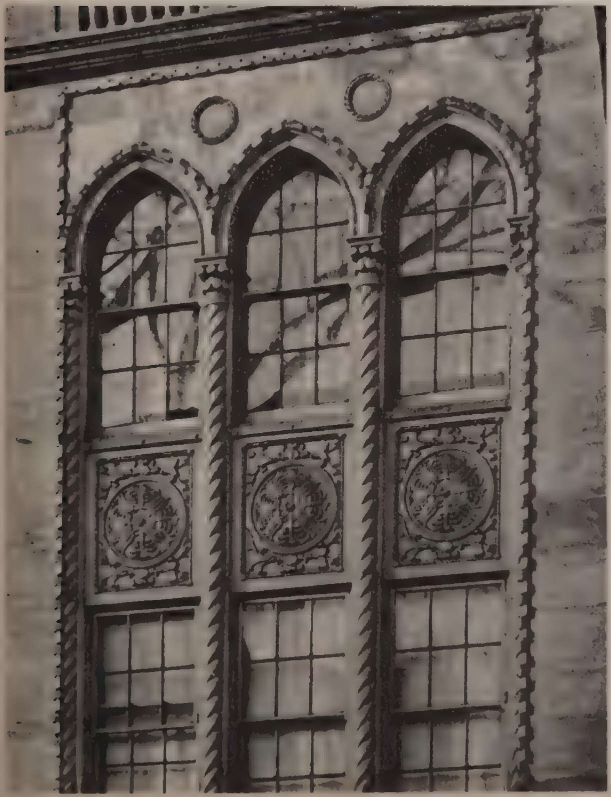


Telephone building, Tiffin, Ohio
Mills, Rhines, Bellman & Nordhoff, Inc.

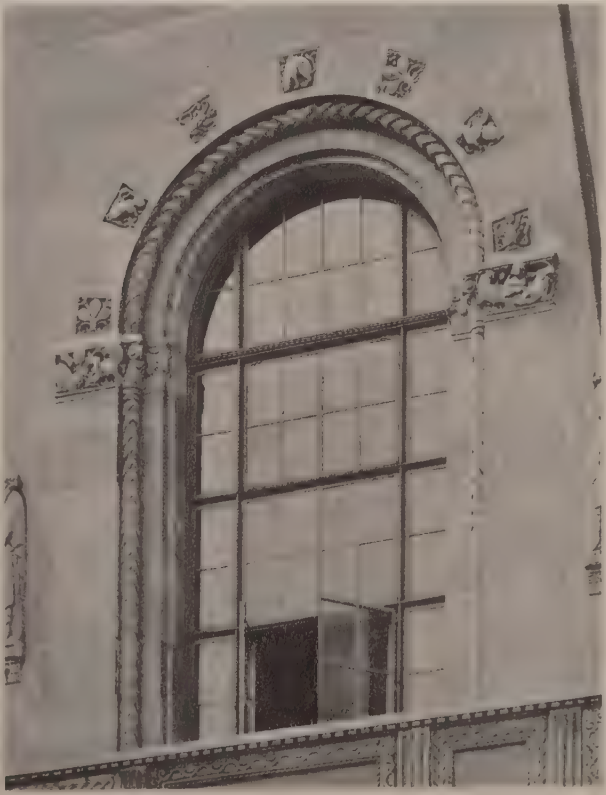


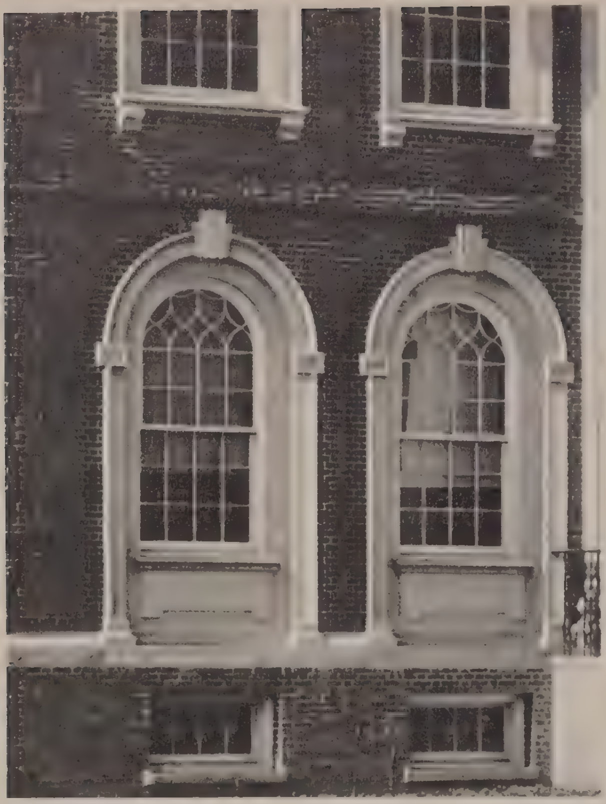
Y. M. C. A. Building, New York City
Dwight James Baum

Apartment house, Chicago, Ill.
Robert S. DeGolyer & Company

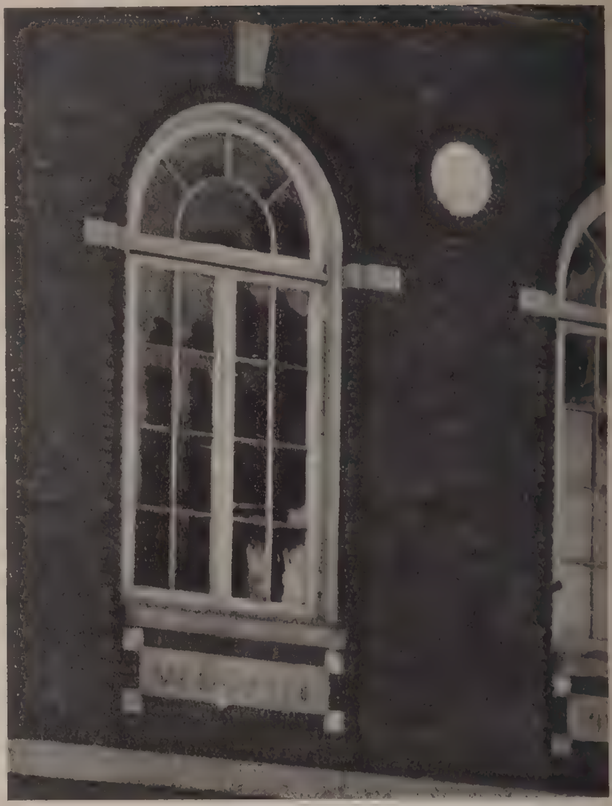


Academy of Medicine, New York City
York & Sawyer



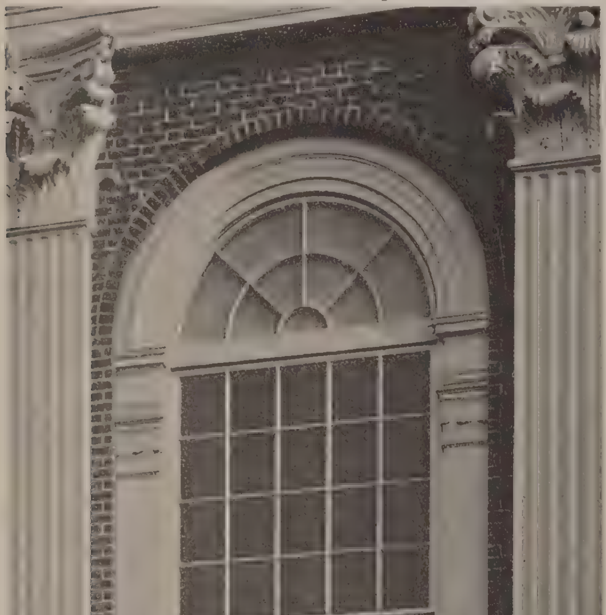


High School, Great Neck, N. Y.
Guilbert & Betelle

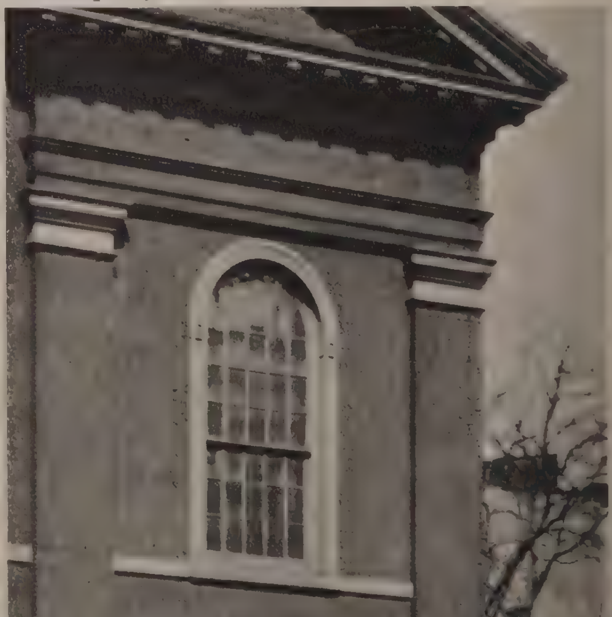


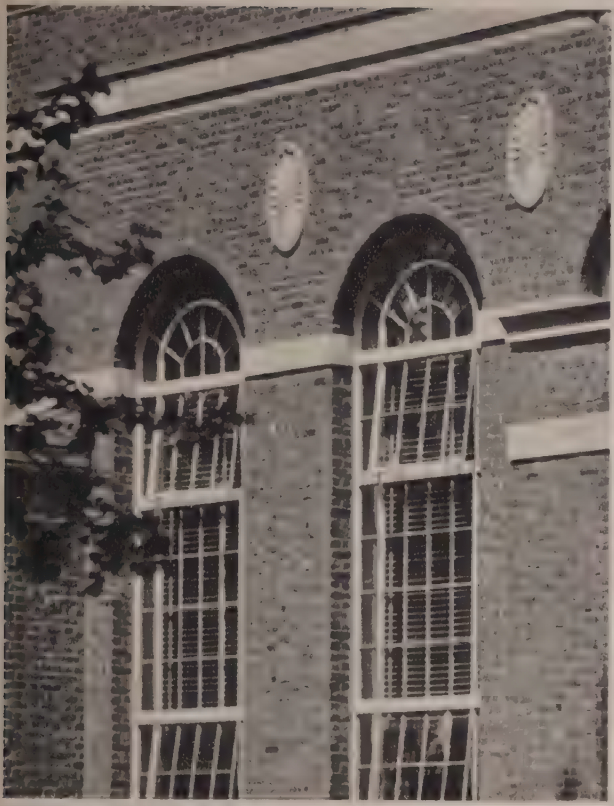
University building, Columbia, S. C.
Edwards & Sayward

University building, Cambridge, Mass.
John Mead Howells

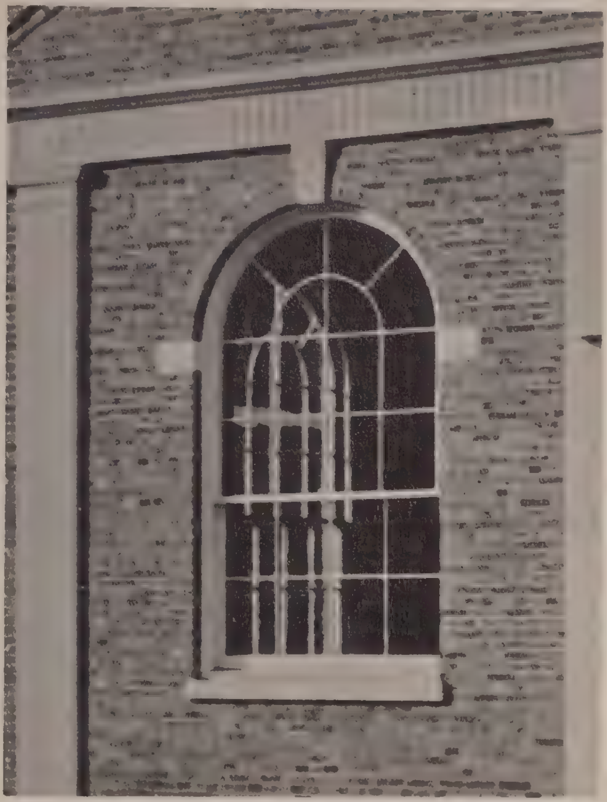


Old St. John's Lutheran Church,
Philadelphia, Pa.



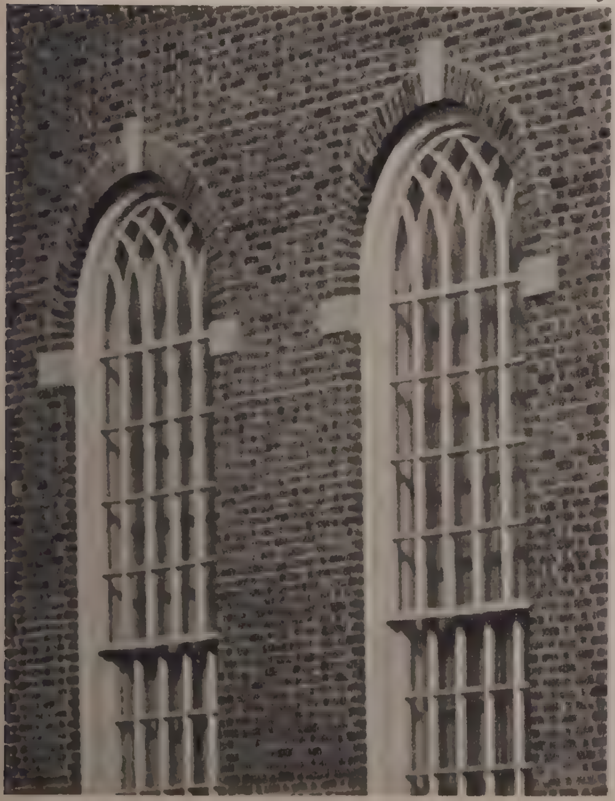


Church building, Ardmore, Pa.
Davis, Dunlap & Barney

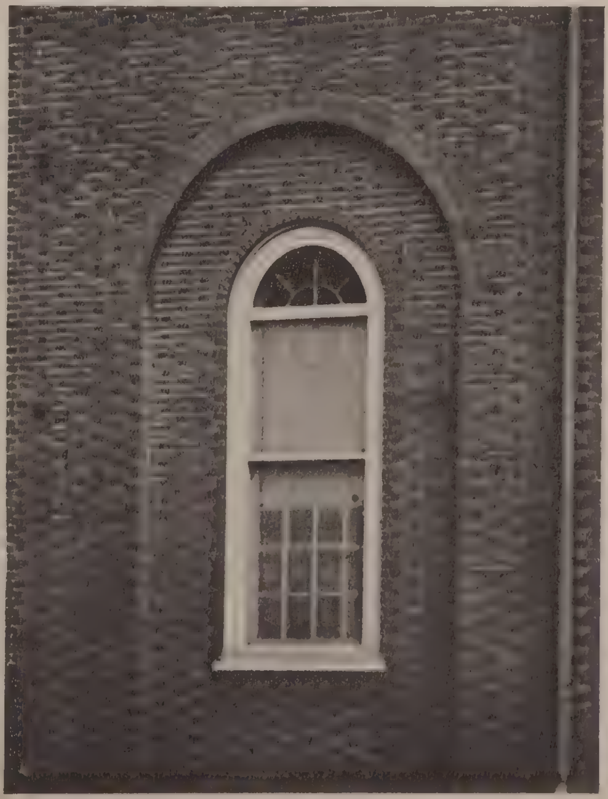


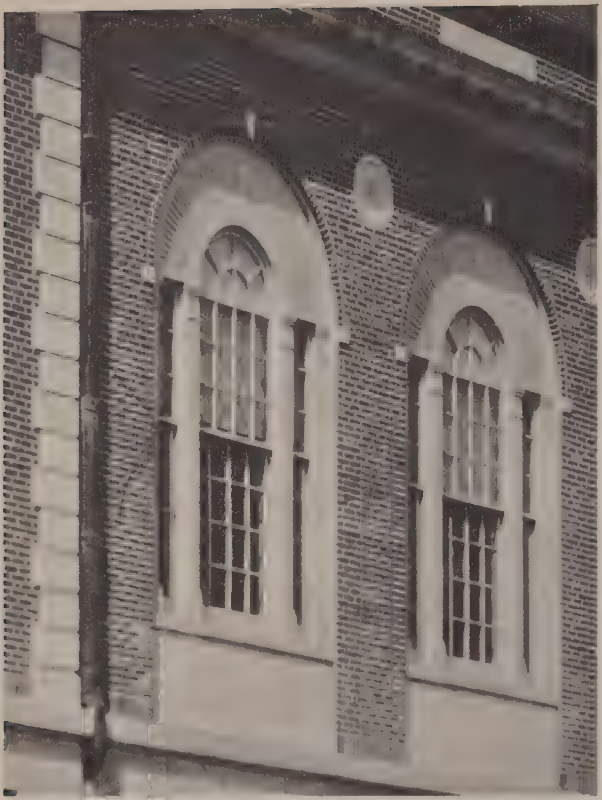
School building, Lake George, N. Y.
Edward Shepard Hewitt

Chapel building, New Brunswick, N. J.
Ludlow & Peabody

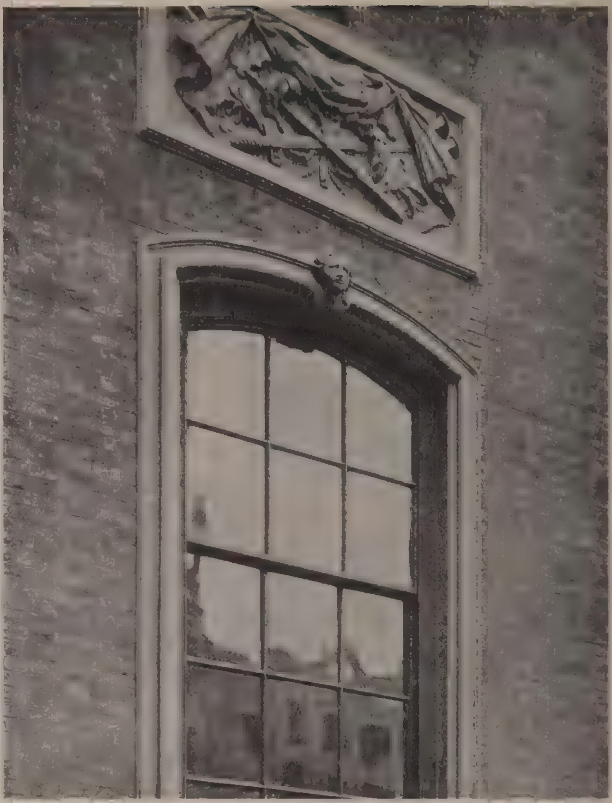


Old Court House,
Salem, N. J.



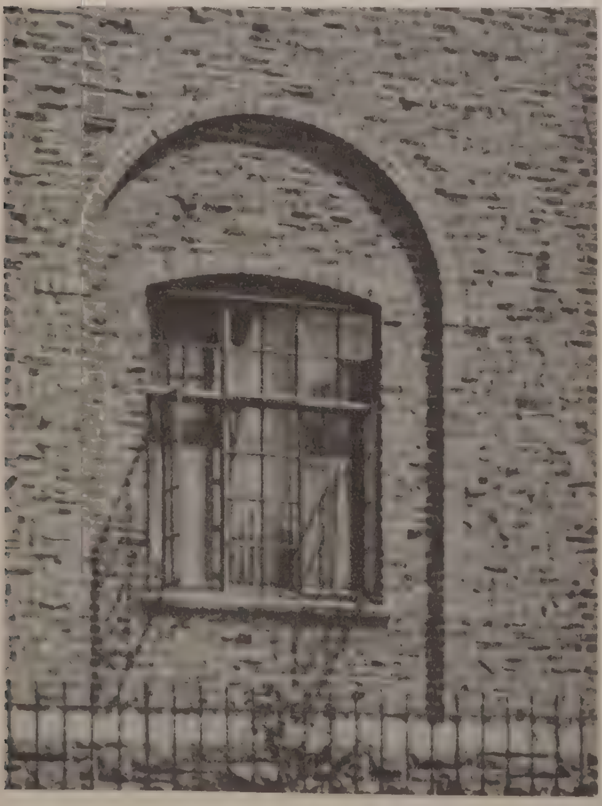


School building, Andover, Mass.
Ripley & Le Boutiller

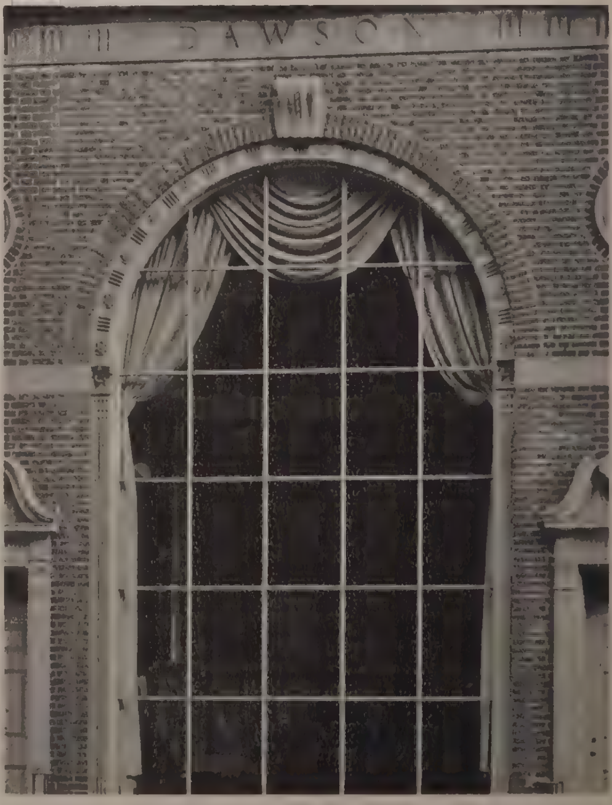


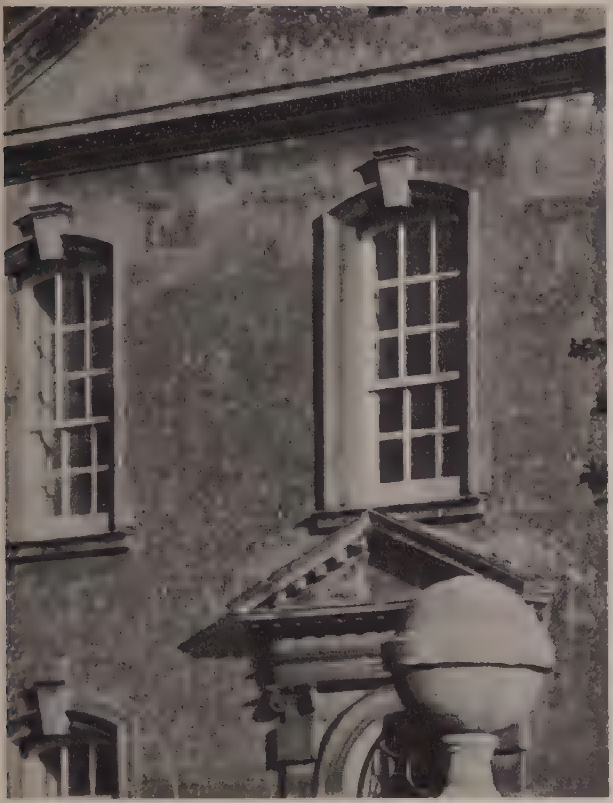
Guildhall, Worcester, England
Thomas White (pupil of Wren)

Convent, Union City, N. J.
Frederick G. Frost

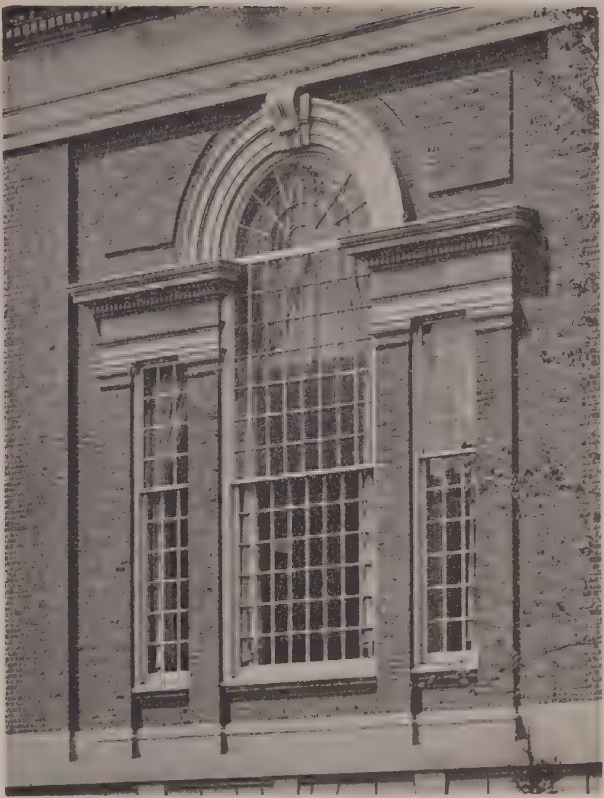


Store, New York City
Greville Rickard



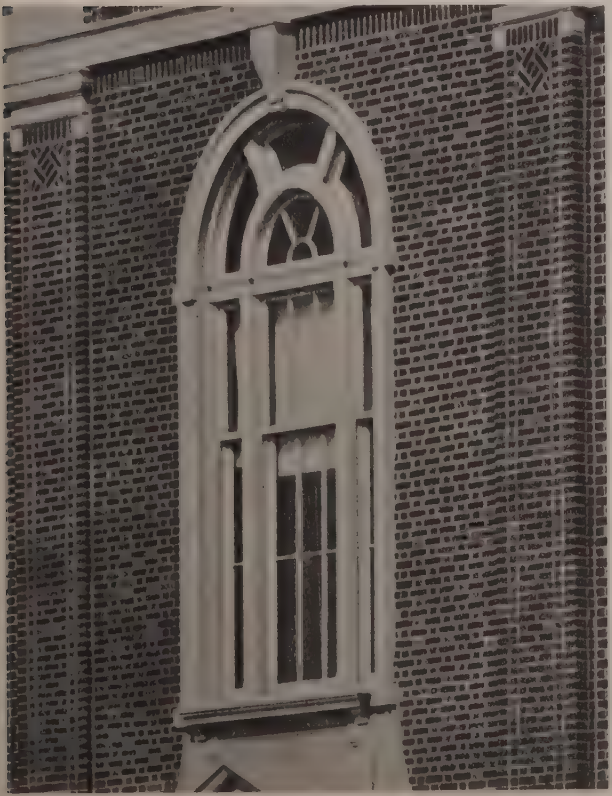


Harington House,
Gloucestershire, England

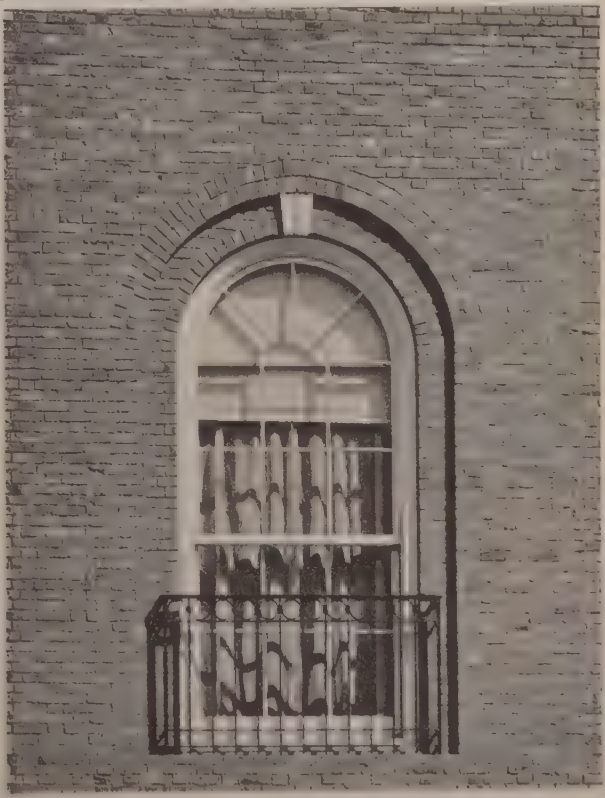


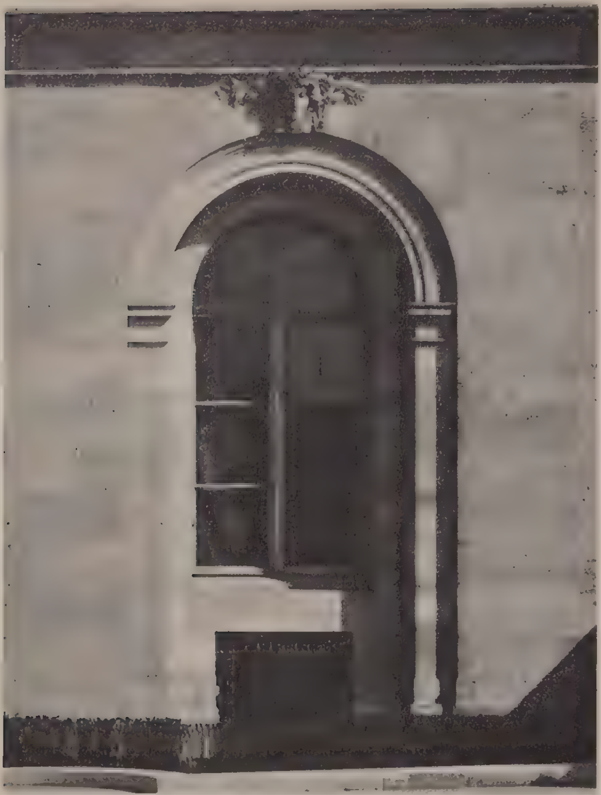
University Chapel, Syracuse, N. Y.
Office of James Russell Pope; Dwight James Baum

School building, Baldwin, N. Y.
Tooker & Marsh

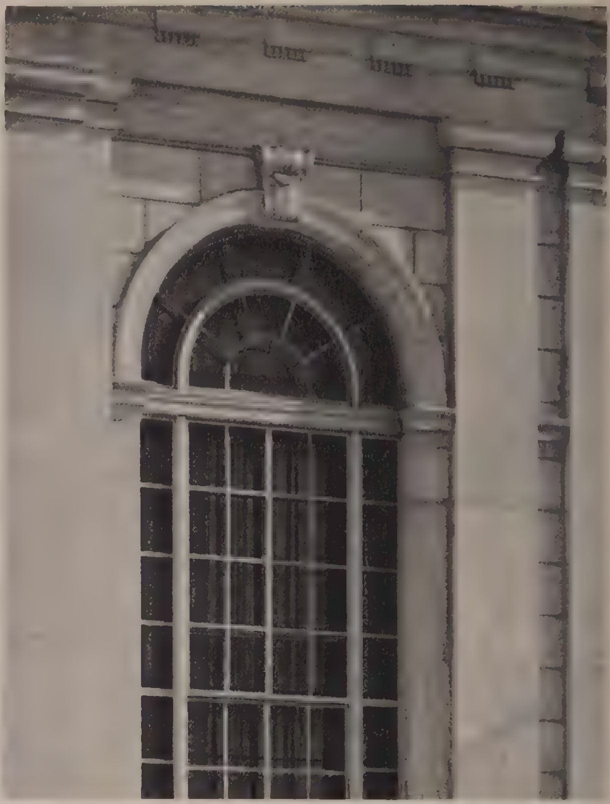


Residence, New York City
Julius F. Gayler



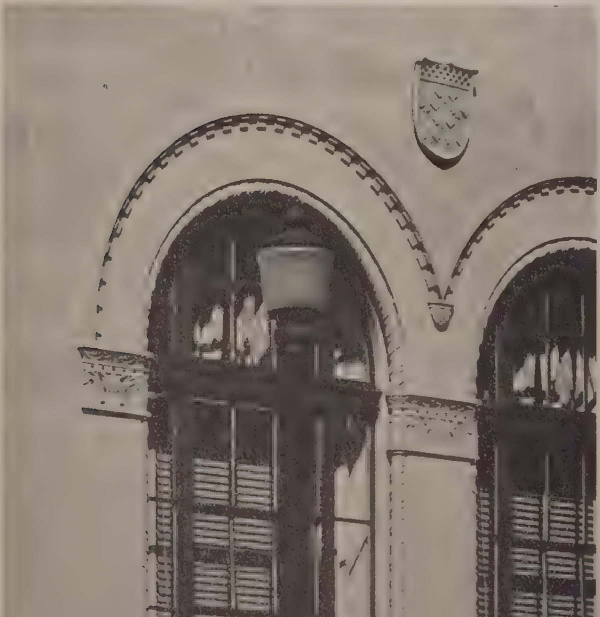


Residence, New York City
Warren & Wetmore

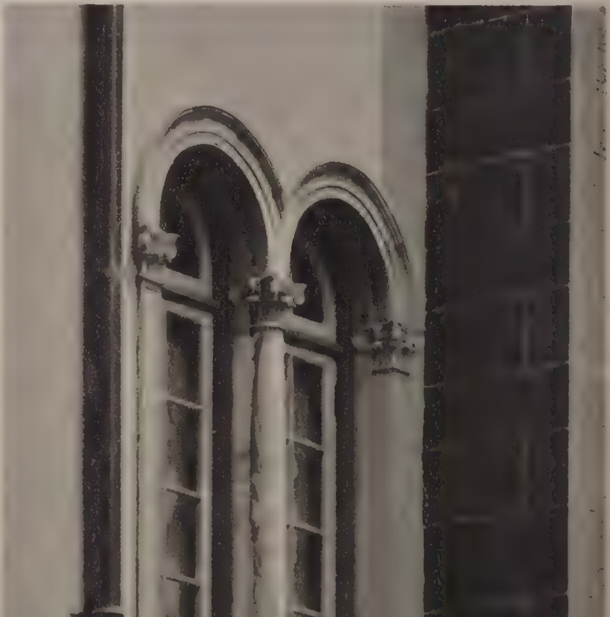


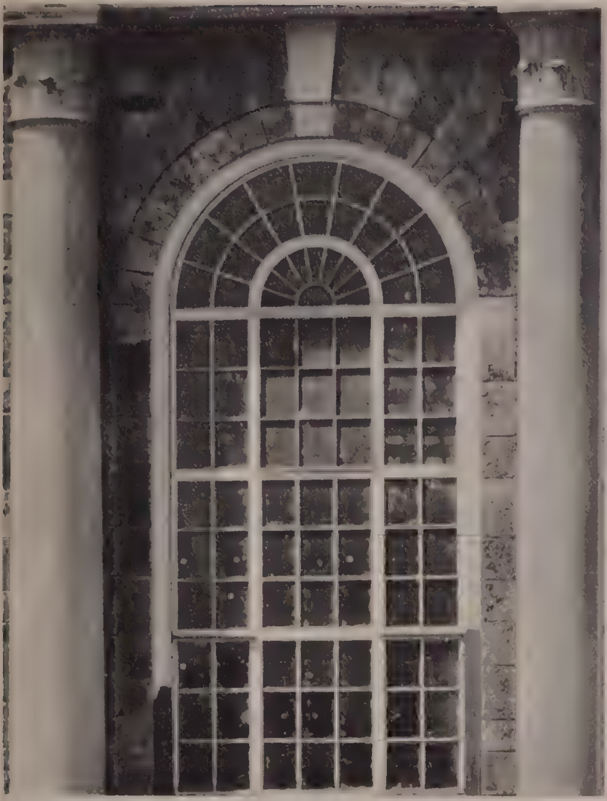
Hotel, New York City
Schultze & Weaver

Bank building, East Orange, N. J.
Holmes & Winslow

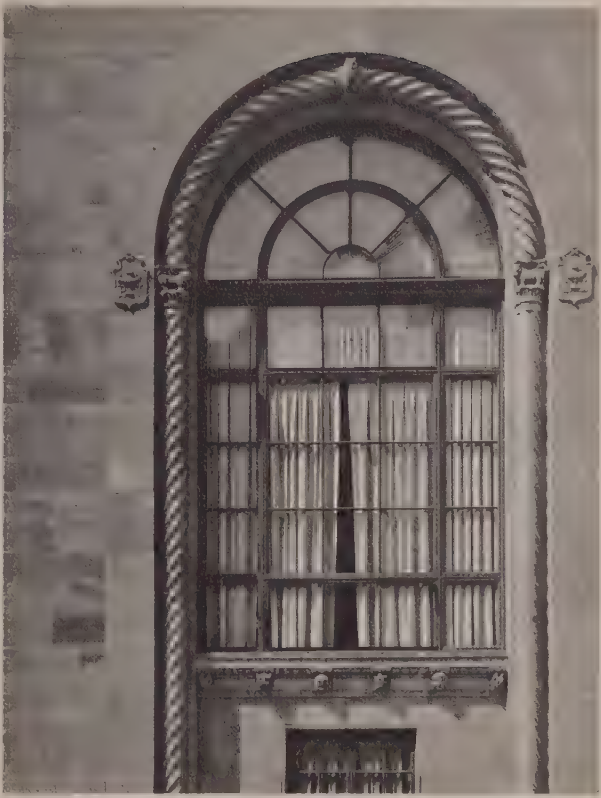


University building, Princeton, N. J.
Cram & Ferguson



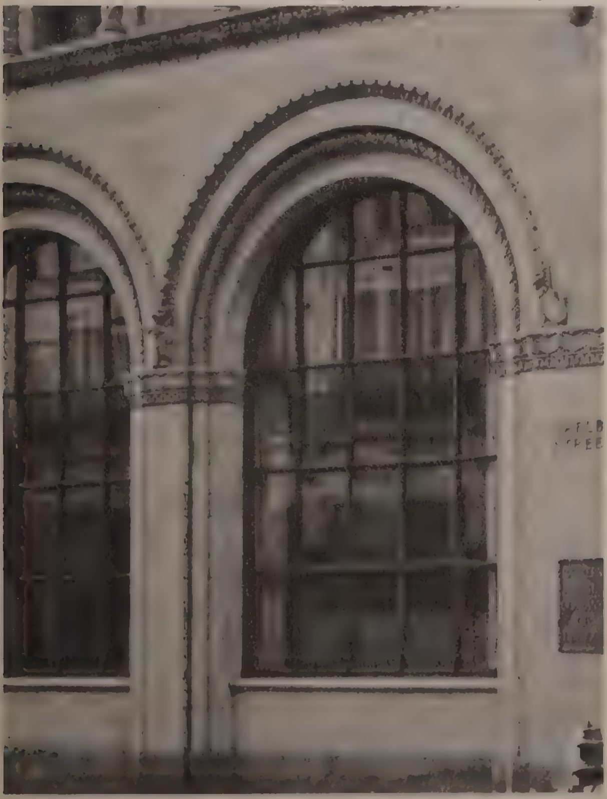


Bank building, Mamaroneck, N. Y.
Office of John Russell Pope

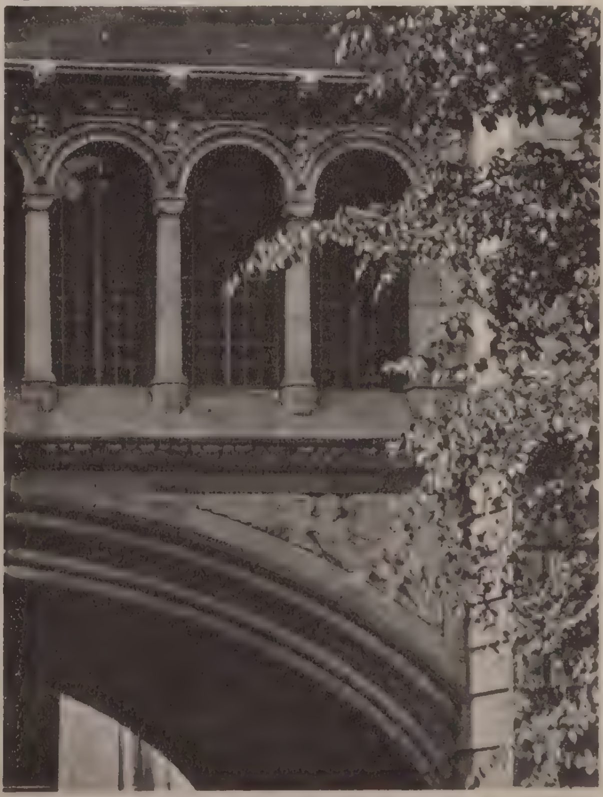


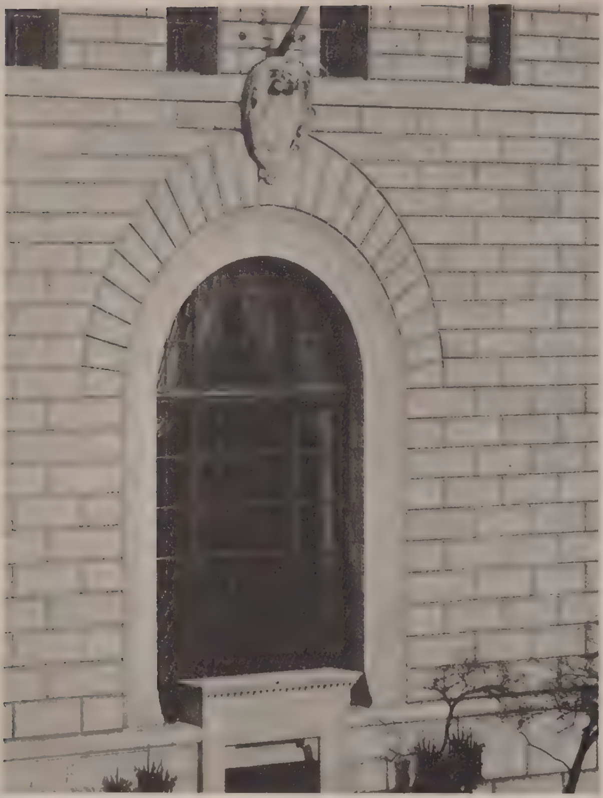
Bank building, Washington, D. C.
Arthur B. Heaton

Bank building, Detroit, Mich.
Smith, Hinchman & Grylls

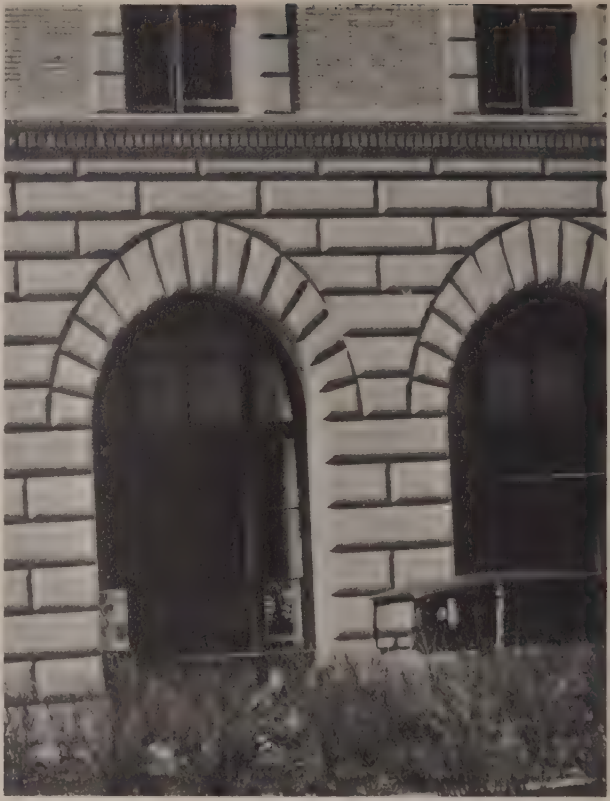


University building, New Haven, Conn.
Egerton Swartwout



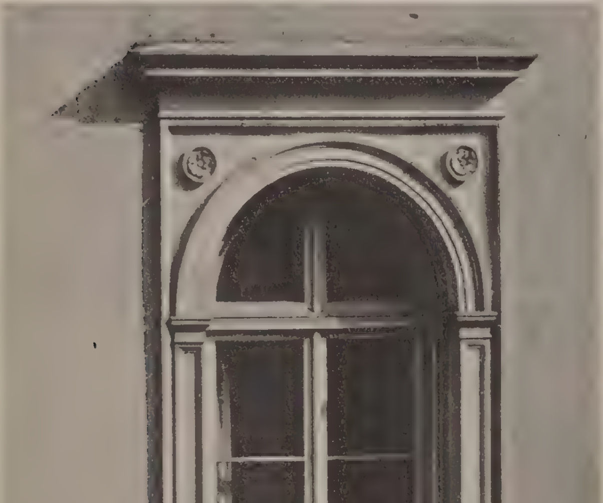


Bank building, New York City
York & Sawyer

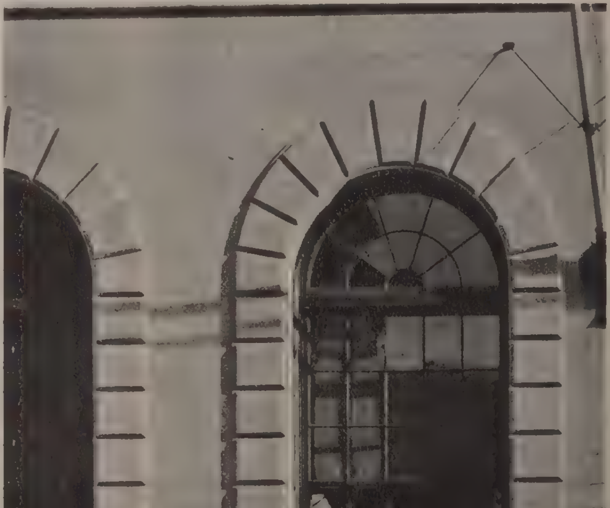


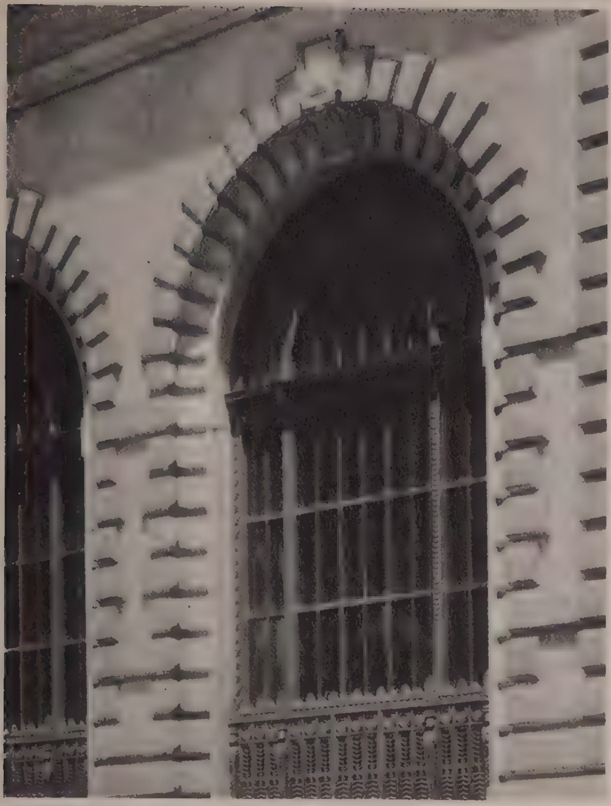
Club building, New York City
McKim, Mead & White

Residence, New York City
William F. Dominick

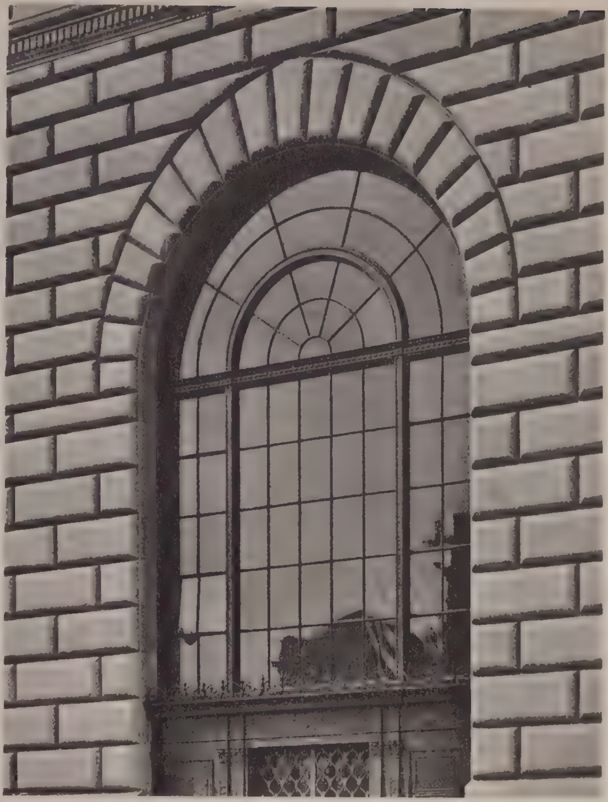


University building, New York City
McKim, Mead & White



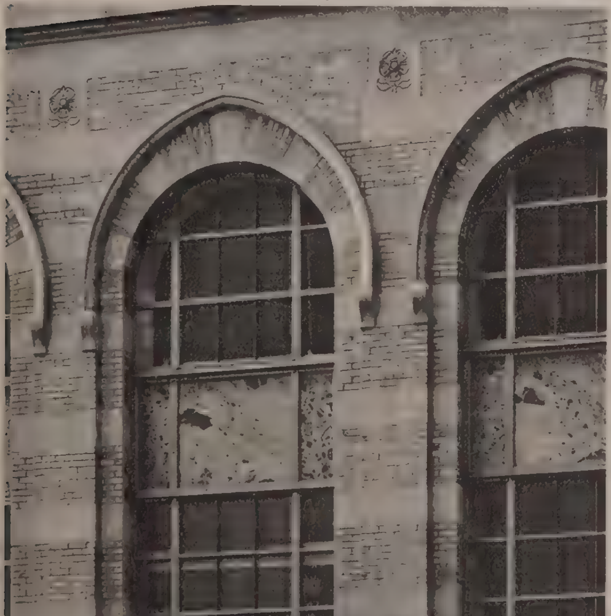


Bank building, New York City
Alfred H. Taylor

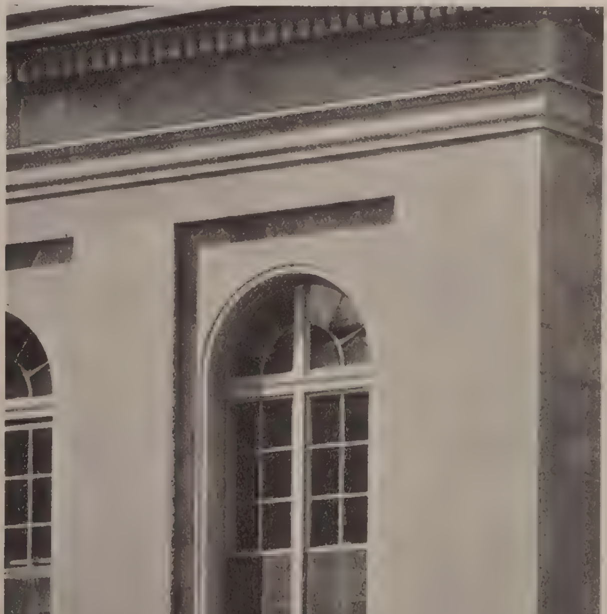


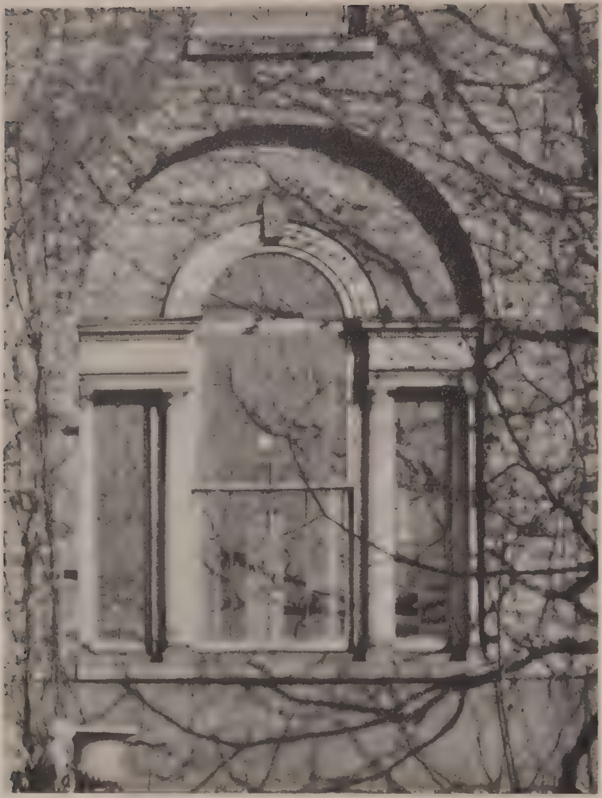
Bank building, Passaic, N. J.
Harry Leslie Walker

College building, New York City
Thompson, Holmes & Converse

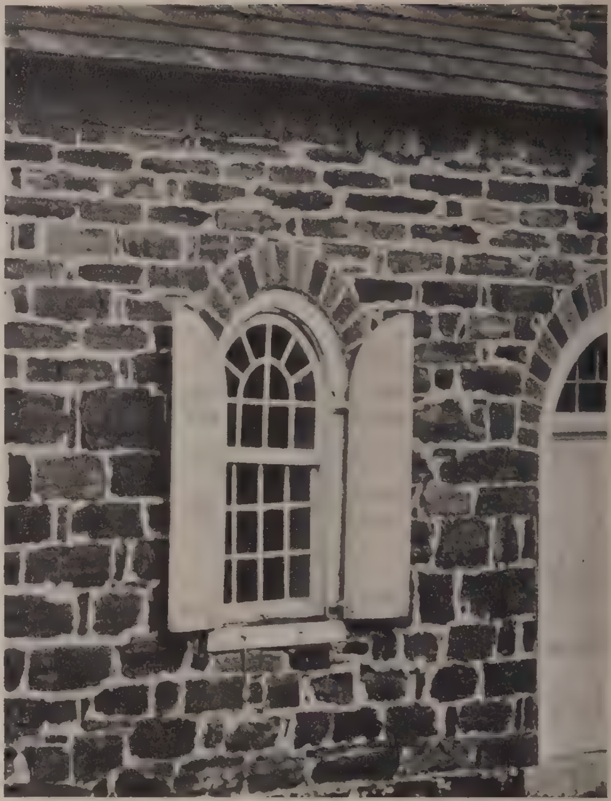


Library building, Tarrytown, N. Y.
Walter D. Blair



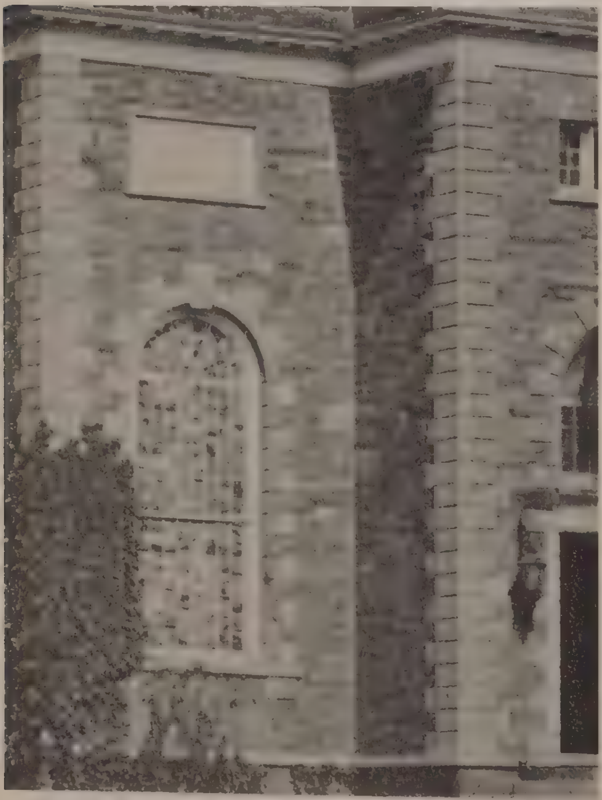


Woodlands (1770),
Philadelphia, Pa.

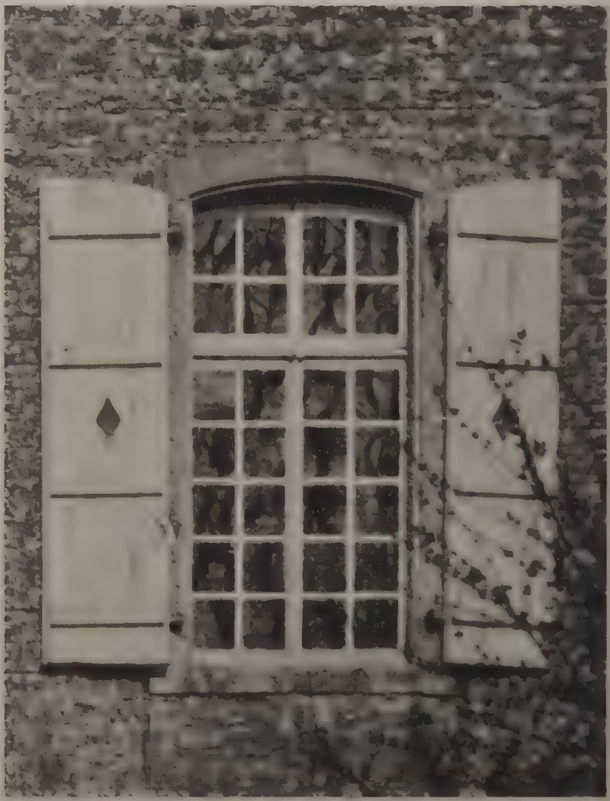


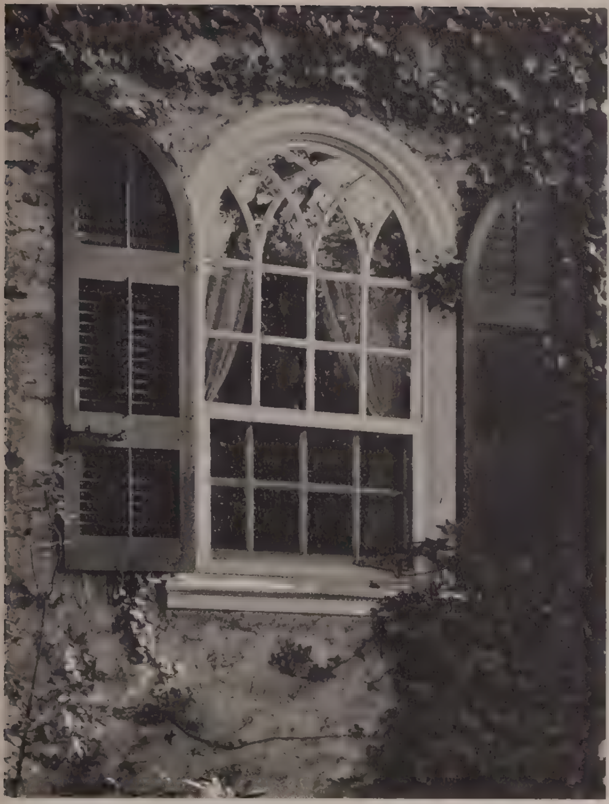
Old church (1710),
Norristown, Pa.

College chapel, Clinton, N. Y.
Philip Hooker

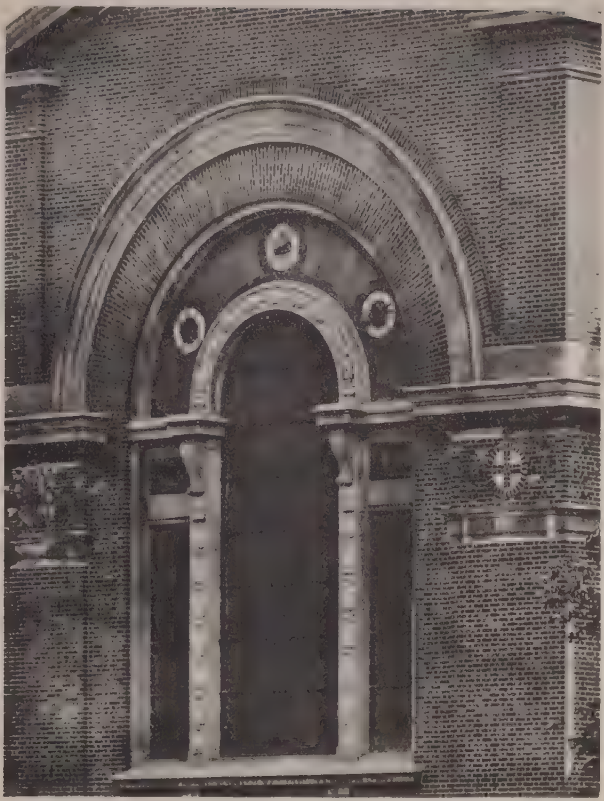


Château d'Odre, Pas de Calais



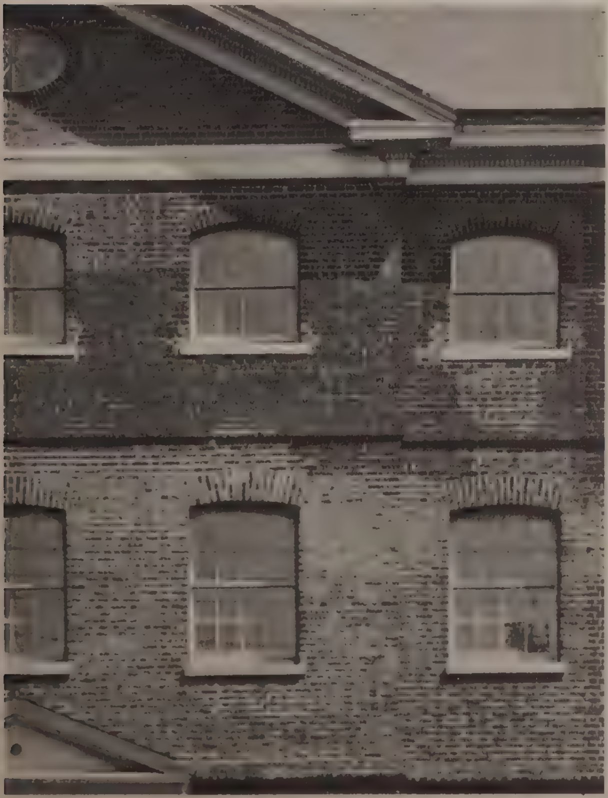


Country house, Oreland, Pa.
Tilden, Register & Pepper

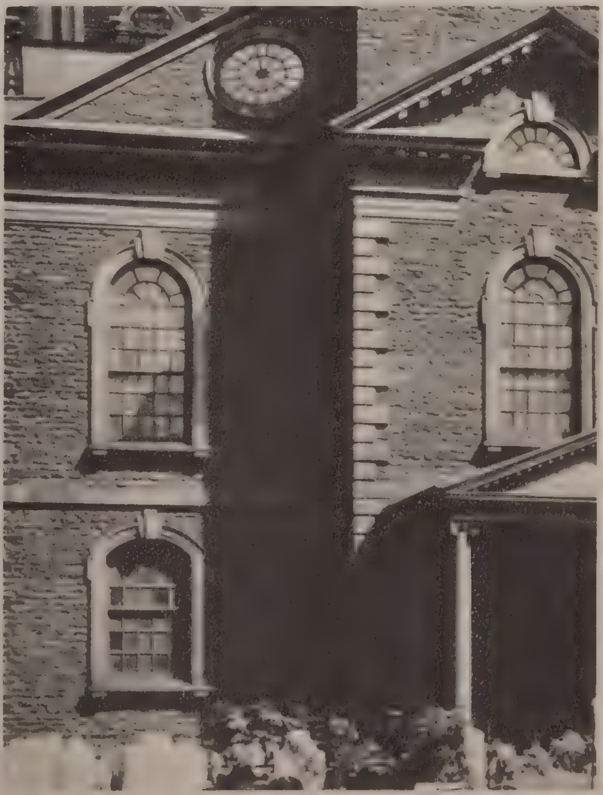


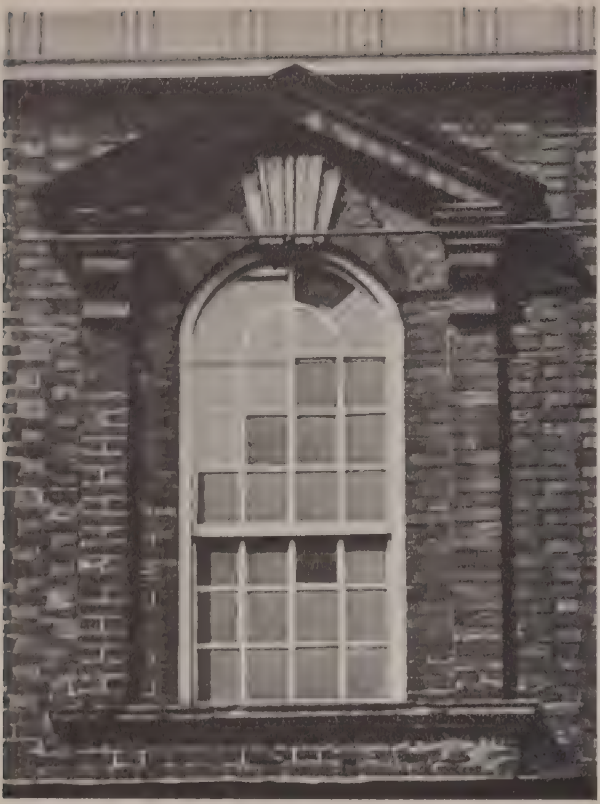
University chapel, New York City
Howells & Stokes

College building (1744),
Annapolis, Md.

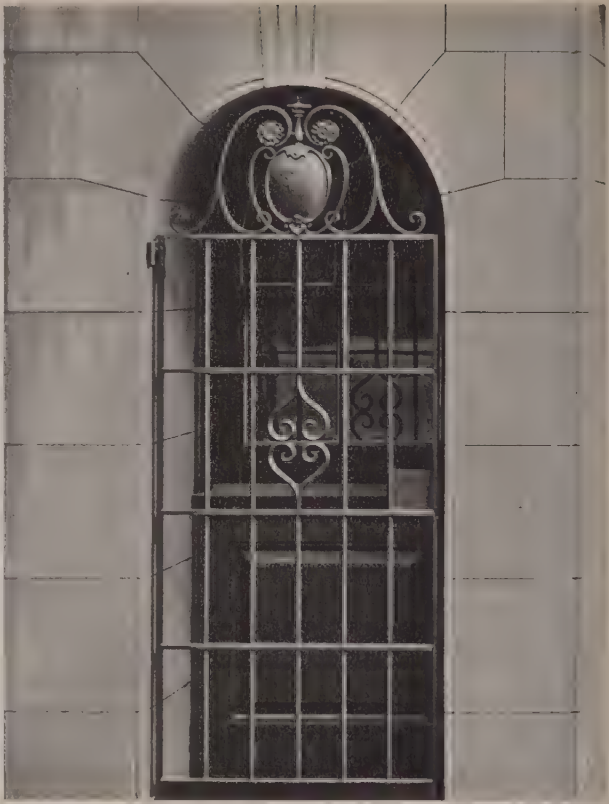


St. Paul's Chapel, 1764–6, New York City
McBean



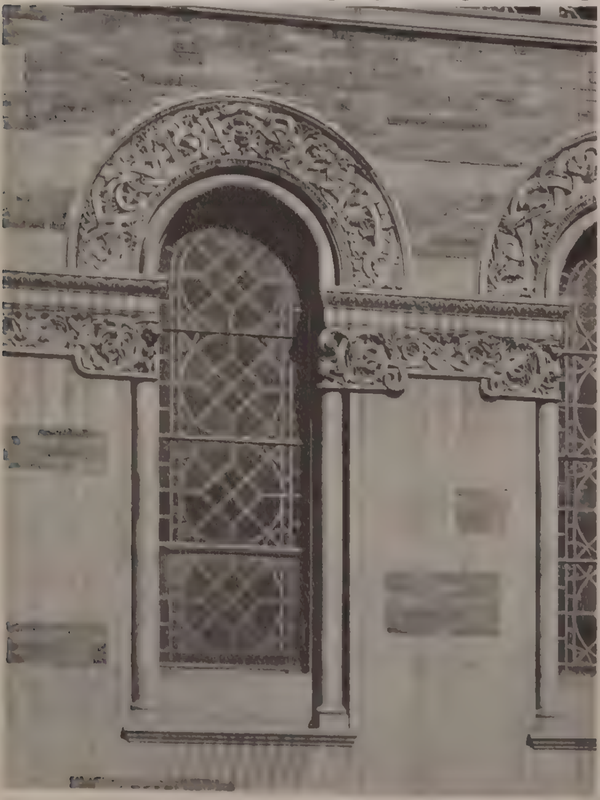


Christ Church (1727),
Philadelphia, Pa.

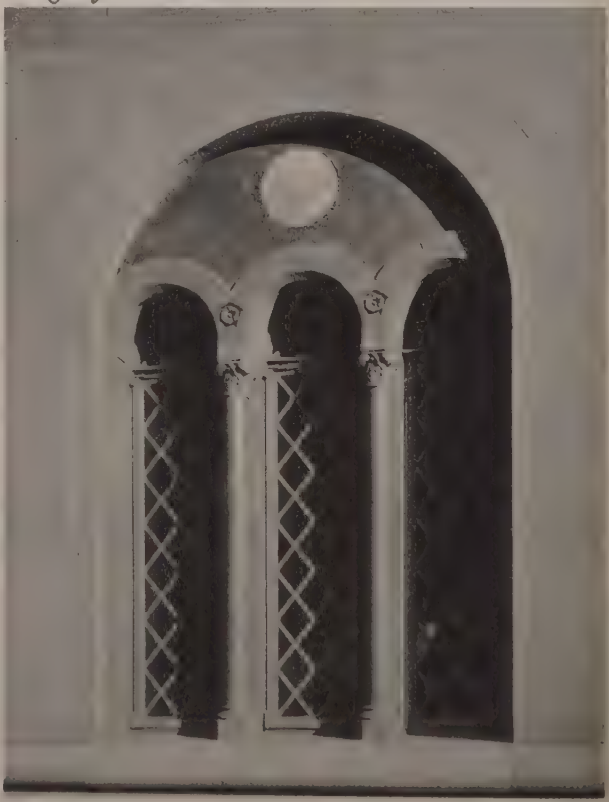


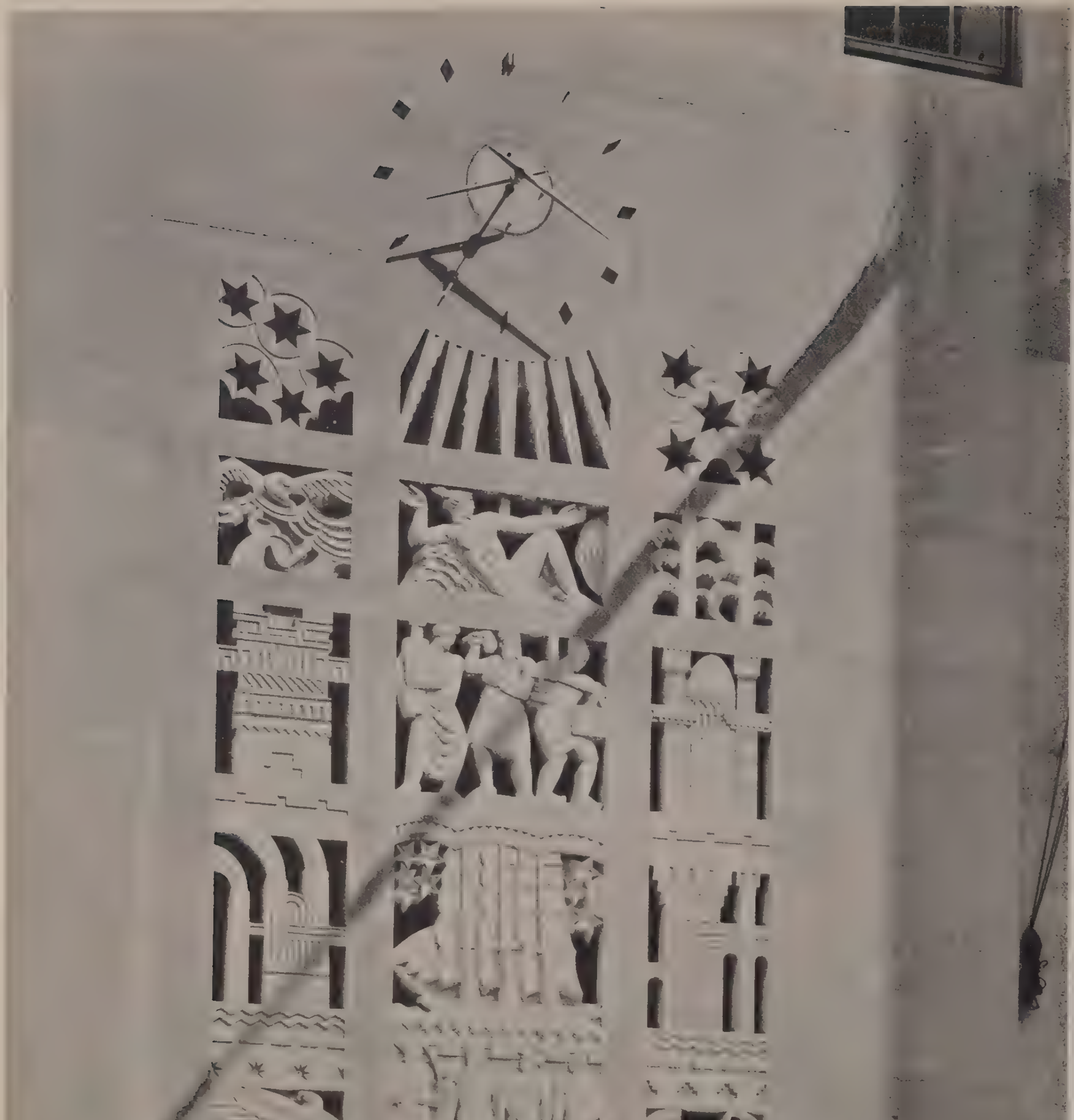
Residence, New York City
Greville Rickard

St. Bartholomew's Church, New York City
Bertram G. Goodhue; Mayers, Murray & Phillip



Y. M. C. A. Building, New York City
Dwight James Baum





SOUTH DOORWAY OF THE NEW INTERNATIONAL BUILDING, ROCKEFELLER CENTER, NEW YORK CITY

REINHARD & HOFMEISTER; CORBETT, HARRISON & MacMURRAY; HOOD & FOUILHOUX, ARCHITECTS

LEE LAWRIE, SCULPTOR

Lee Lawrie, sculptor, conceived the panel and made a sketch model which Rene P. Chambellan enlarged to full size under his direction. Here are represented the four races of mankind; communication by water; art, science, and industry—the common attributes that have led all men to higher stages of civilization. The sculptor has represented the earth by the sun, the two hemispheres by the Big Dipper and Southern Cross; the dwelling places of the four races by a sea gull and whale's fluke for the North, palm trees for the South, a mosque for the East, and an Aztec temple for the West. The lion and the Norman tower symbolize the old order; the eagle and chimney stacks, the new

ARCHITECTURE
VOLUME LXXII NUMBER 5
NOVEMBER, 1935

A NEW CRAFTSMANSHIP IN CAST STONE

By Eugene Clute

CAST stone is used as cast stone, and its possibilities are developed to an unusual degree, in the recently completed portion of the central unit of the Wichita Art Institute, Wichita, Kansas, of which Clarence S. Stein is the architect. The walls are faced with pre-cast slabs most of which measure 10 feet by 6 feet and are 5 inches thick. Each of these units weighs about 3500 pounds.

They were picked up by a travelling crane at the yard in which they were made and loaded on a truck which delivered them at the site of the building as they were wanted by the setters. There they were taken from the truck with a hand-power winch and a stiff-leg derrick and set in less time and at less cost than would have been required in facing the same surfaces with smaller units.

As each unit was put in place, it was anchored securely. Where the slabs come in contact with the concrete frame of the building, there are galvanized rings, cast in the back of the units, which engage pins cast in the concrete frame. Connection with the tile backing which fills in between the members of the frame is made with anchors for which 8-inch slots about 20 inches on centres were cast in the backs of the slabs. The locations of the rings and pins were shown on the setting drawings. They were placed accurately and the setting proceeded smoothly. The cast stone units fitted their places and no cutting was required. Handling was facilitated by rings cast in the back and top edge of each unit for this purpose. The bevels prevented chipping of the edges in transit or handling. These bevels also make a very neat finish at the joints—a smooth splay three-quarters of an inch wide by one-half of an inch deep at either side of a one-quarter-inch mortar joint.

To go back to the casting yard, these units were cast face downward in wooden molds, or forms, which were so constructed as to produce the irregular horizontal markings that give the surface of the stones an interesting texture in

Clarence Stein's perspective drawing of the Wichita Art Institute in its completed form. At present only a portion has been built, as shown on page 243

keeping with the scale of the building. Each form was large enough to take an entire stone. Though only three forms were used, no two stones have the same markings in the same place. This freedom from repetition is due to the way in which the forms were made and used.

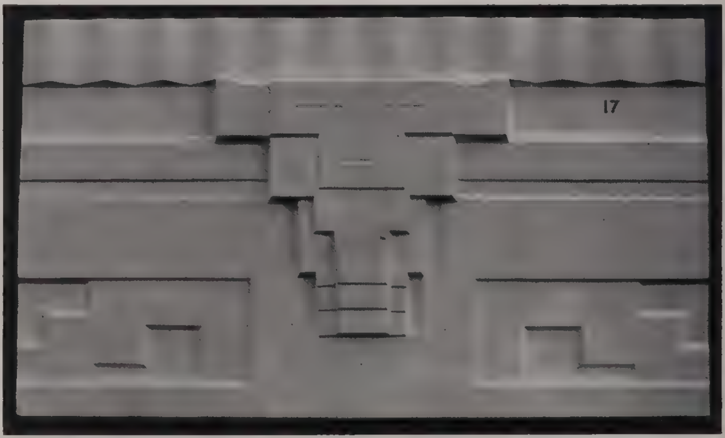
The bottom of the form, in each case, was composed of strips of yellow pine about 2 inches wide by 1¾ inches thick, laid side by side and held together by long threaded rods, or bolts, run through them from side to side of the form at intervals of 16 inches. To give rigidity to this assembly, cleats of two-by-four yellow pine were attached to the back 12 inches on centres, at right-angles to the strips. These cleats were secured to the strips by means of 4-inch lag bolts 6½ inches on centres, with their heads countersunk.

To form the strips, two-by-fours were sawn in half, lengthwise, on a band saw. In doing this, the work was guided so that a wave line was produced, instead of a straight saw cut. The undulating surfaces of the strips were so placed, in assembling the forms, that they came next to the face of the stone and thus gave it a considerable degree of irregularity.

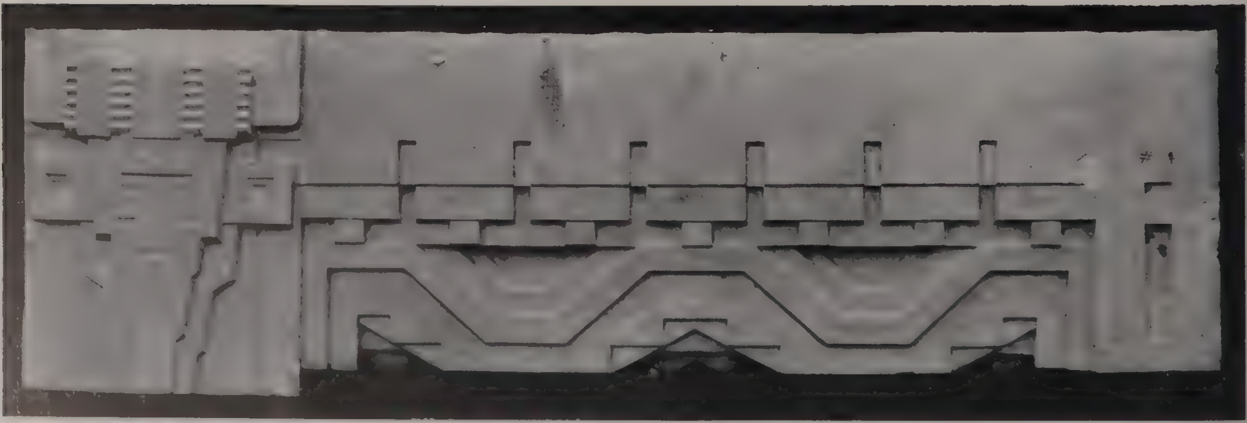
In order to produce the horizontal markings, ⅛-inch play was provided by boring ½-inch holes in the strips for the ⅜-inch cross rods. This caused the strips to form an uneven surface, and, as the molds were moved between castings, the arrangement of these lines was never twice alike. In many places adjoining strips happened to lie in the same plane, and no markings appear.

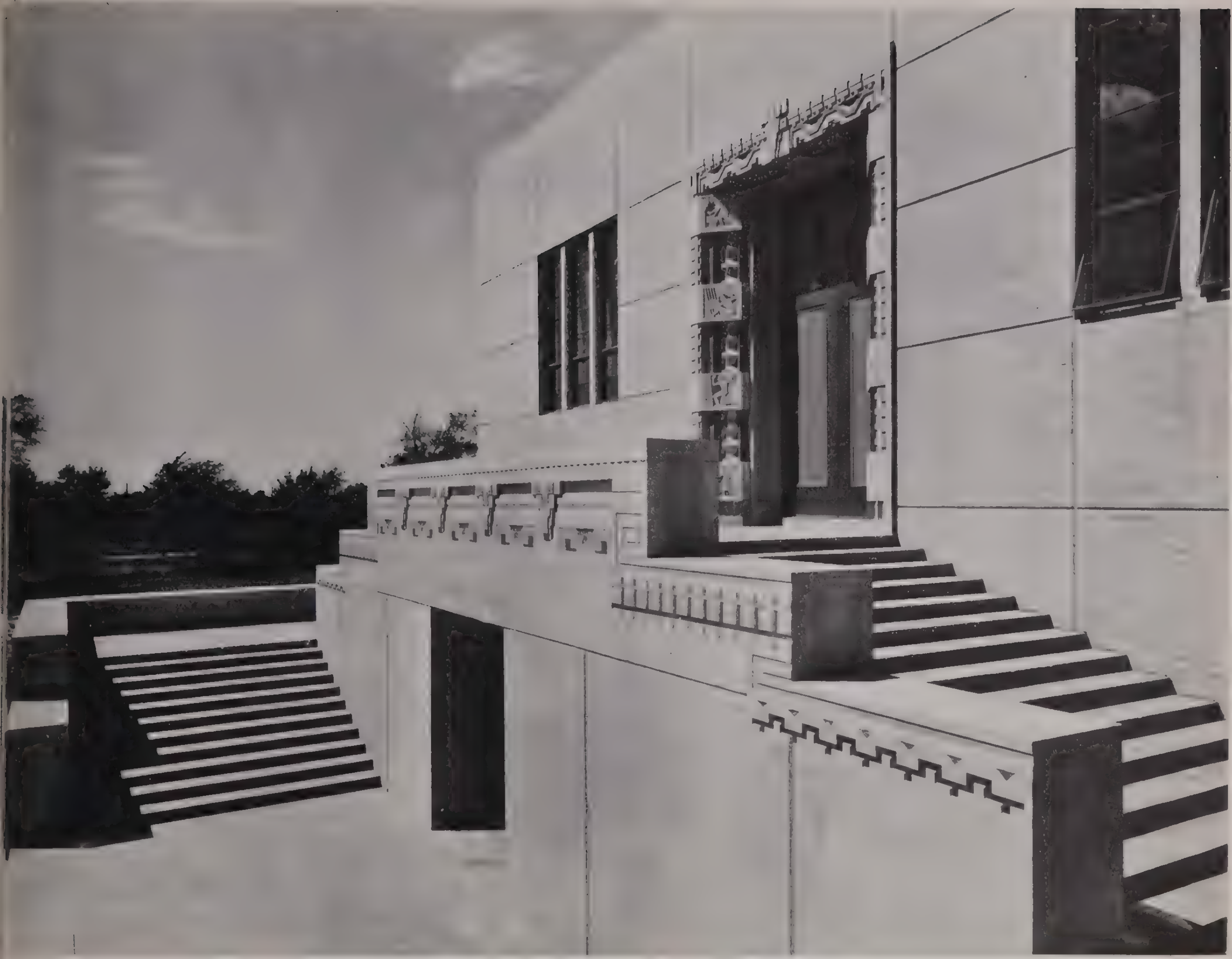
To insure sufficiently pronounced markings and to control them, small wooden wedges were inserted back of some of the strips, between them and the cleats, forcing these strips into greater prominence and making corresponding depressions in the face of the stone. These wedges were changed about at each casting.

Yellow pine was used for the strips forming the face of the molds because, being hard, it would resist wear and retain its wave lines and the sharpness of its edges. The two-by-fours from which these strips were cut were first straightened and sized to exactly 3½ inches and the material for the cleats was sized in the same way, so that the assembly might be made of uniform thickness throughout, excepting for



Lee Lawrie's plaster models of the main entrance: at right the capping motif of the front terrace wall; below, the lintel. Compare these plaster models with the finished doorway in polychrome





Of the building as projected, only the central portion, two stories in height, has been erected. The texture of the wall slabs is a very subtle variation of planes, as the photograph indicates

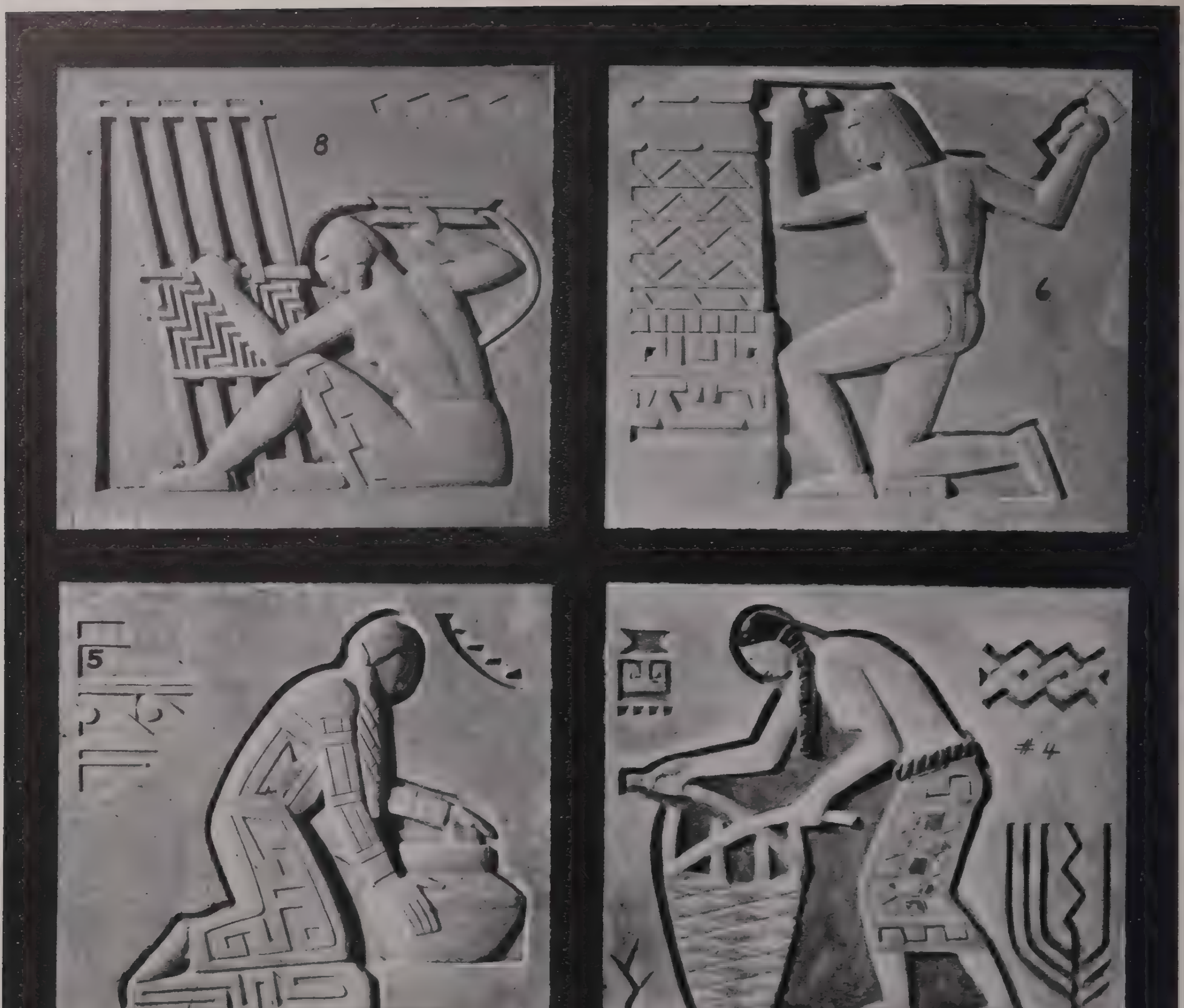
the desired undulations of the surface. After the strips were sawn, they were put in a jig and the holes were bored through them for the cross rods. Then they were given three coats of hot linseed oil and assembled tightly together, care being taken to make the face of the mold the same width at both ends and in the centre. In assembling, not more than ⅛ of an inch deformation was permitted. The sides of the forms, 5 inches high, were each made from a 2-inch and a 1-inch white pine board nailed together, with cleats between to hold them rigid. The molds were lubricated with form oil, a petroleum product.

A concrete floor large enough to accommodate these molds was laid to a straight-edge and ground down with a terrazzo floor grinder to a true plane, and everything was in readiness for the casting.

The mix for the face of these cast stone units was as follows: 150 pounds yellow concrete sand, having a modulus of 300; 150 pounds coarse river gravel, through ¾-inch and ¼-inch screen; 100 pounds white cement; 1 pound dark yellow cement color; 2 pounds water-proofing; 5½ gallons water.

The cement and the color were first ground together in a ball machine until they were so thoroughly mixed that they did not show yellow streaks when placed on a board and struck with a trowel. The facing mix was placed by vibration and worked over the entire face of the mold by means of an especially made vibrator paddle using a 2-inch stroke air vibrator—to a thickness of about 1 inch.

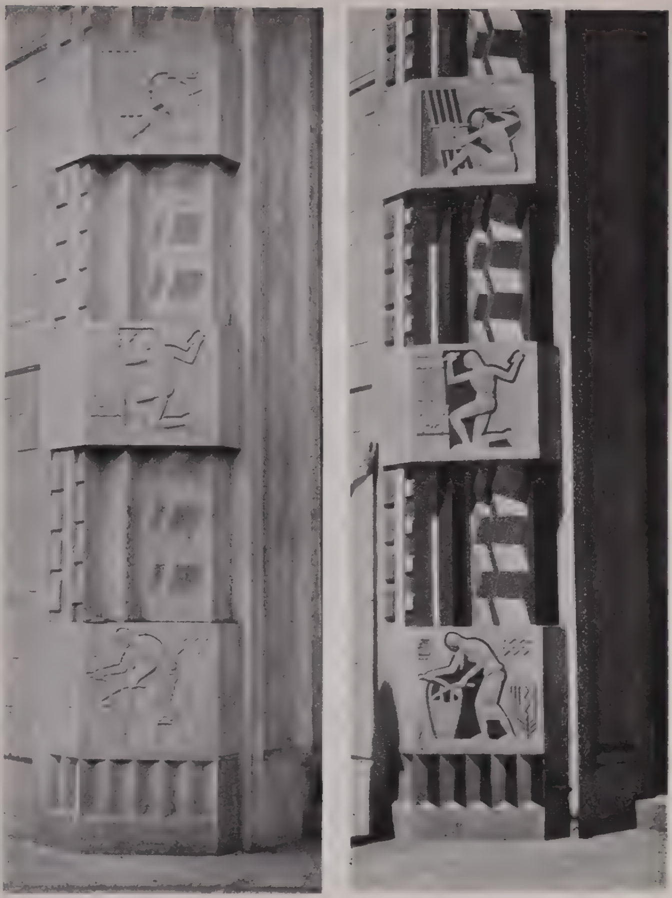
The backing was then vibrated into place with the same apparatus. The backing mix



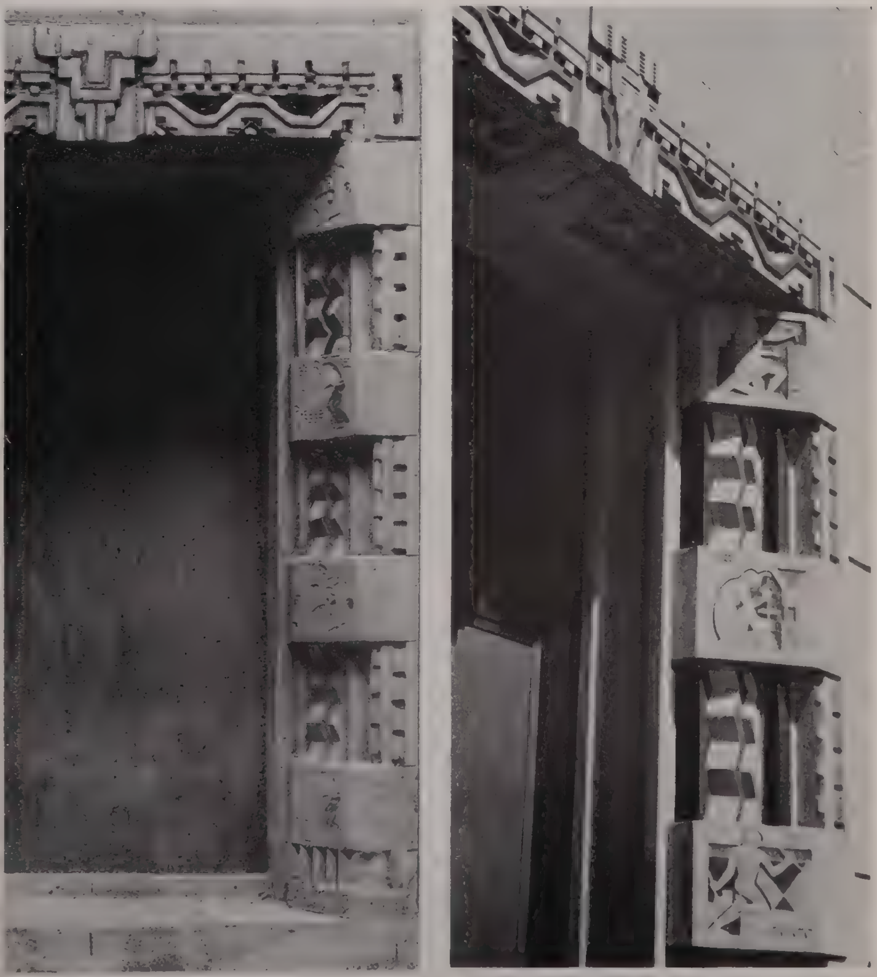
Lee Lawrie's plaster models of various Indian arts, which, cast in stone and colored, form part of the main entrance was as follows: 220 pounds coarse concrete sand, with fineness modulus of 300; 220 pounds ¾-inch Joplin stone; 100 pounds gray cement; 10 pounds hydraulic cement; 4½ gallons water.

In casting, the forms were always laid out so that the tops of the stones were toward the north, so that there might not be any uncertainty as to which was top in handling them. The lifting rings, the rings for anchoring, and the anchor slots were all carefully placed in accordance with the drawings.

Stones made one day were picked up the next day by the travelling crane and placed in the sand bins, where they were covered with wet sand and kept wet for twenty days, after which they were wet only occasionally. When the stones were ready for delivery, they were set up and sand-blasted, to cut the film of cement off the surface. Though one-half of the facing mix consisted of ¾-inch and ¼-inch gravel, none of this was exposed by the sand-blasting, for the vibration had worked the finer material and sand into the face of the stone. The mixes and the process of placing produced a cast stone that is said to have a compressive strength of more than 5000 pounds. The craftsmanship in cast stone for this building was executed by The Lusco Brick and Stone Company, and the work was executed under the direction of B. F. Krehbiel.



Jambs and lintel of main entrance. At right the cast stone in place, shown before and after the color had been applied in the form of penetrating silicates. Below is the model of lintel and jamb shown beside the finished product



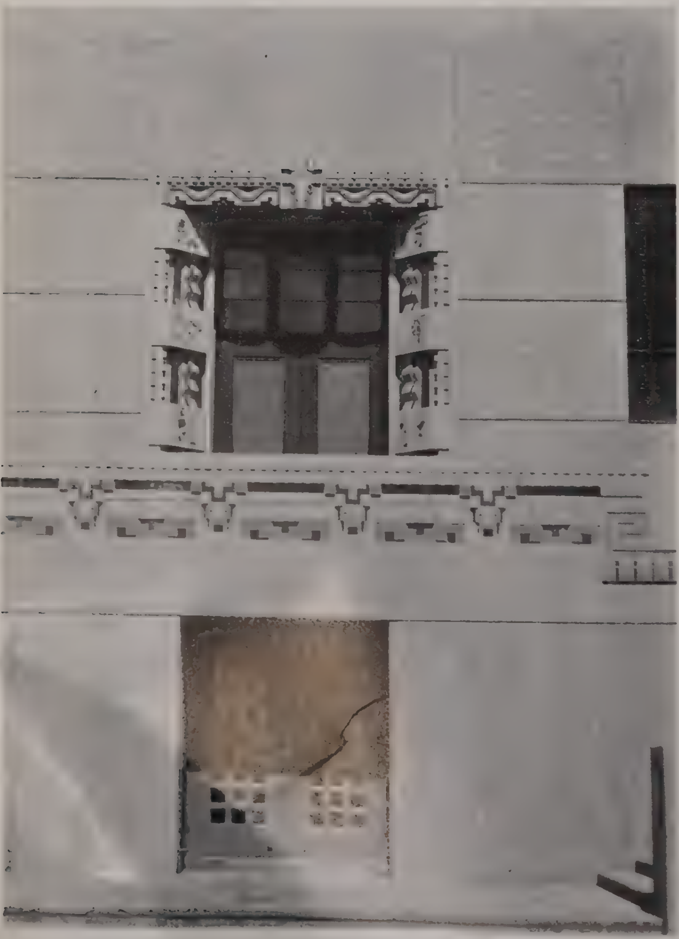
The color of the facing units is a very pleasing light buff, warm and of a slightly golden cast. The grain of the stone is close, but vibrant and rich in appearance. Its texture, including the effect produced by the horizontal markings, is characteristic of the material, due to the method by which it was made, and not an imitation of any other material. It is sufficiently bold to be effective at a distance and it has refinements that make it satisfactory at close range. It is in keeping with the monumental character of the building.

That the units are applied to the walls with the vertical joints directly above one another emphasizes the fact that this cast stone is a facing—a curtain. There is no attempt to create the impression that this is natural stone or masonry construction—quite the reverse. It is, frankly, cast stone used in a thoroughly modern manner.

The ornamental cast stone detail of the sculptural enframement of the main entrance and the detail of the parapet of the terrace were made in much the same way as the wall facing units, excepting that the molds were partly of plaster and partly of wood, the sculptural detail being in plaster while the plain parts were of wood. The casting of the ornament was accomplished with ease, as the sculptor's models were all made with due consideration for the technique of cast stone and there were no undercut portions calling for the use of piece-molds.

Lee Lawrie was the sculptor. He has carried out the architect's intention with great distinction, presenting abstract designs in which effective use is made of rectangular planes set at angles to produce a lively and well-studied play of light and shade that is essentially architectural. Together with these are forms that recall characteristic motives of American Indian ornament. Also, there is an abstraction of an ox skull, reminiscent of the early days on the great plains. Then, as accents standing out from this ornament, he has shown in relief, upon projecting blocks of stone in the splayed reveals at the sides of the entrance, representations of American Indian arts and crafts, four on either side. These relief figures are remarkable for their simple beauty and sincerity. In the sculptural enrichment of this building the spirit of the great people that once occupied the wide reaches of our country is expressed with rare ability.

Below, the main entrance as seen above and behind the terrace wall

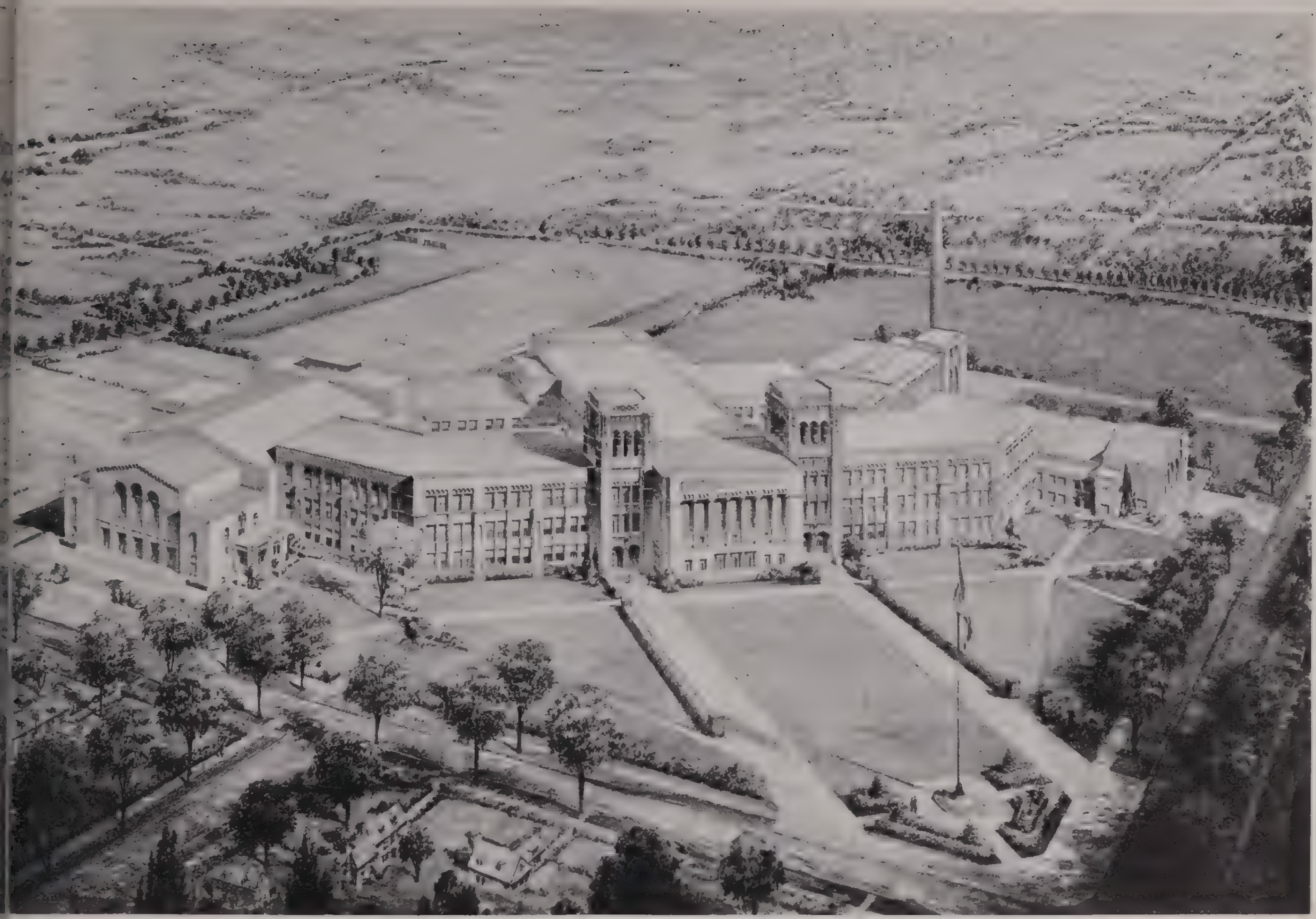


This sculpture is in polychrome, which greatly enhances its effectiveness and beauty. It was modelled with the thought that it was to be colored; the treatment with color was not an after-thought. The colors are a rich Pompeiian red, a deep lapis lazuli blue, and a fine golden yellow. They are lasting, for they are mineral colors combined with a vehicle that, together with the pigments, forms silicates in the pores of the stone and they contain no perishable material. This technique in polychromy is the same that was employed upon the sculpture of the main entrance to the R.C.A. Building in Rockefeller Centre, New York City.

The final development of the Wichita Art Institute is shown in the water-color rendering of the architect's design, which is reproduced here. The portion of the building that is completed consists of only the first and second stories of the central unit, to which another story is to be added, and extensive wings as well. The stones that finish the top of the present wall will ultimately form the belt course below the third story.

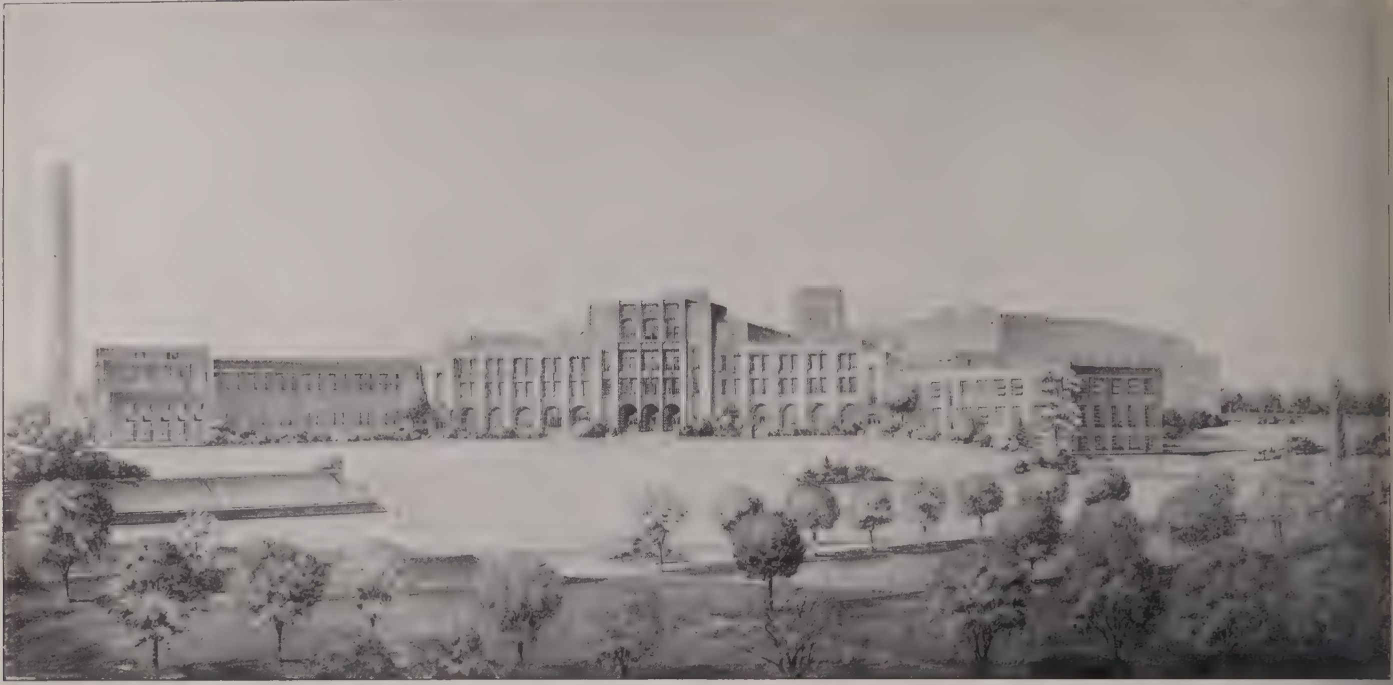
Facilities for educational work and for showing travelling art exhibitions and loan collections are featured more strongly than museum facilities in the plans of the Wichita Art Institute, and a lecture hall occupies the greater part of the first floor of the completed section, with an entrance at the ground level. Monumental staircases at the right and left of this doorway lead to the terrace at the second-floor level and the main entrance of the building.

Cast stone has been used to imitate natural stone so commonly, and it has been cheapened so often and in so many ways that its really great possibilities are seldom recognized. The manner in which it has been used in this building commands new respect for this material.

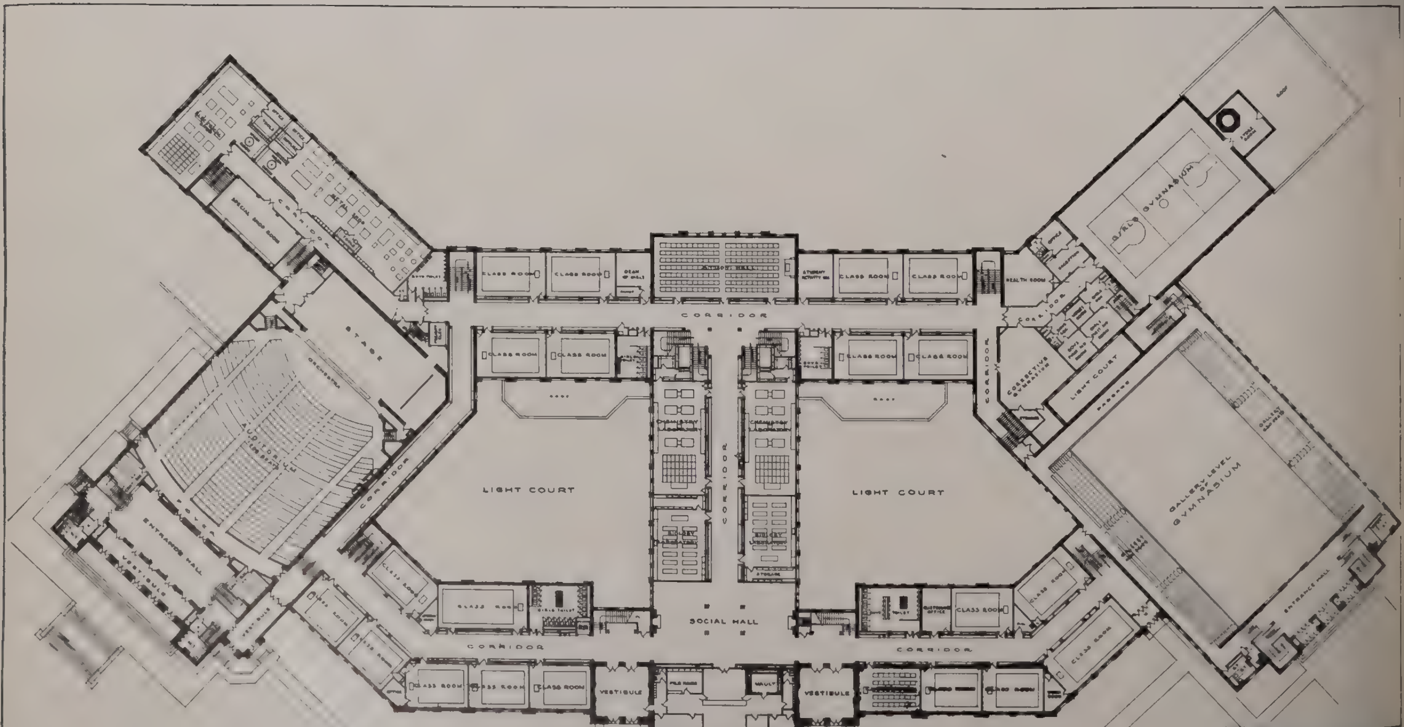


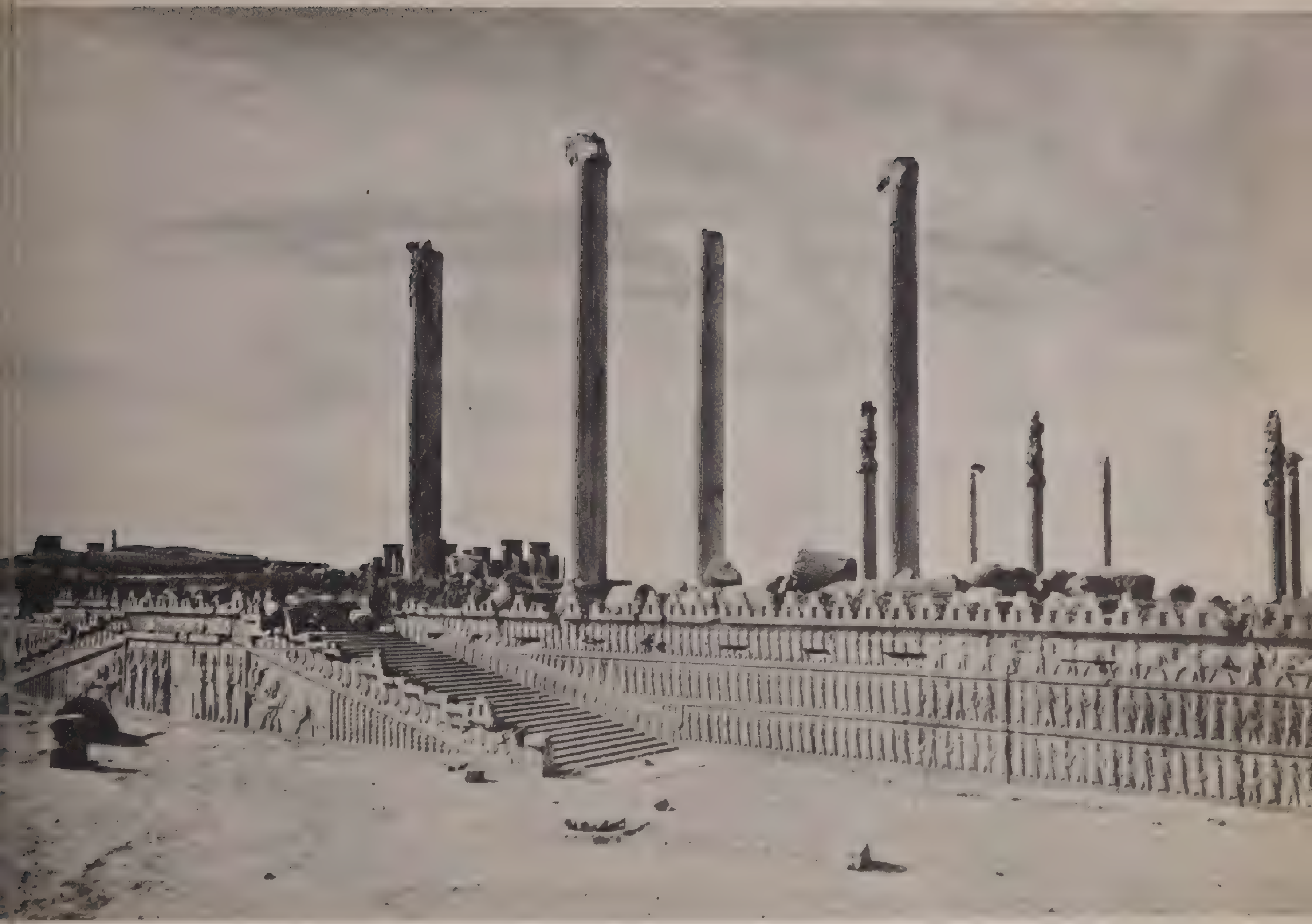
Construction contracts were awarded early last summer for the Wyandotte High School, now being erected in Kansas City, Kan. The site is a sloping one comprising over twenty-seven acres. Upon it has already been built an athletic field and a concrete stadium. The high-school building and its equipment will cost about $2,000,000. It is expected that the school will be ready for use in January next. Hamilton, Fellows & Nedved; Joseph W. Radotinsky, associated architects

A THREE-YEAR HIGH SCHOOL FOR 3000 PUPILS



In the plan of the first floor, shown below, the laboratories for chemistry and biology flank the central corridor, with study hall at the end opposite the entrance. To the right is the equipment for physical training and hygiene; to the left the auditorium with its stage, and the shops for metal work and electrical apparatus. In the horizontal connections are the classrooms, each lighted from one side

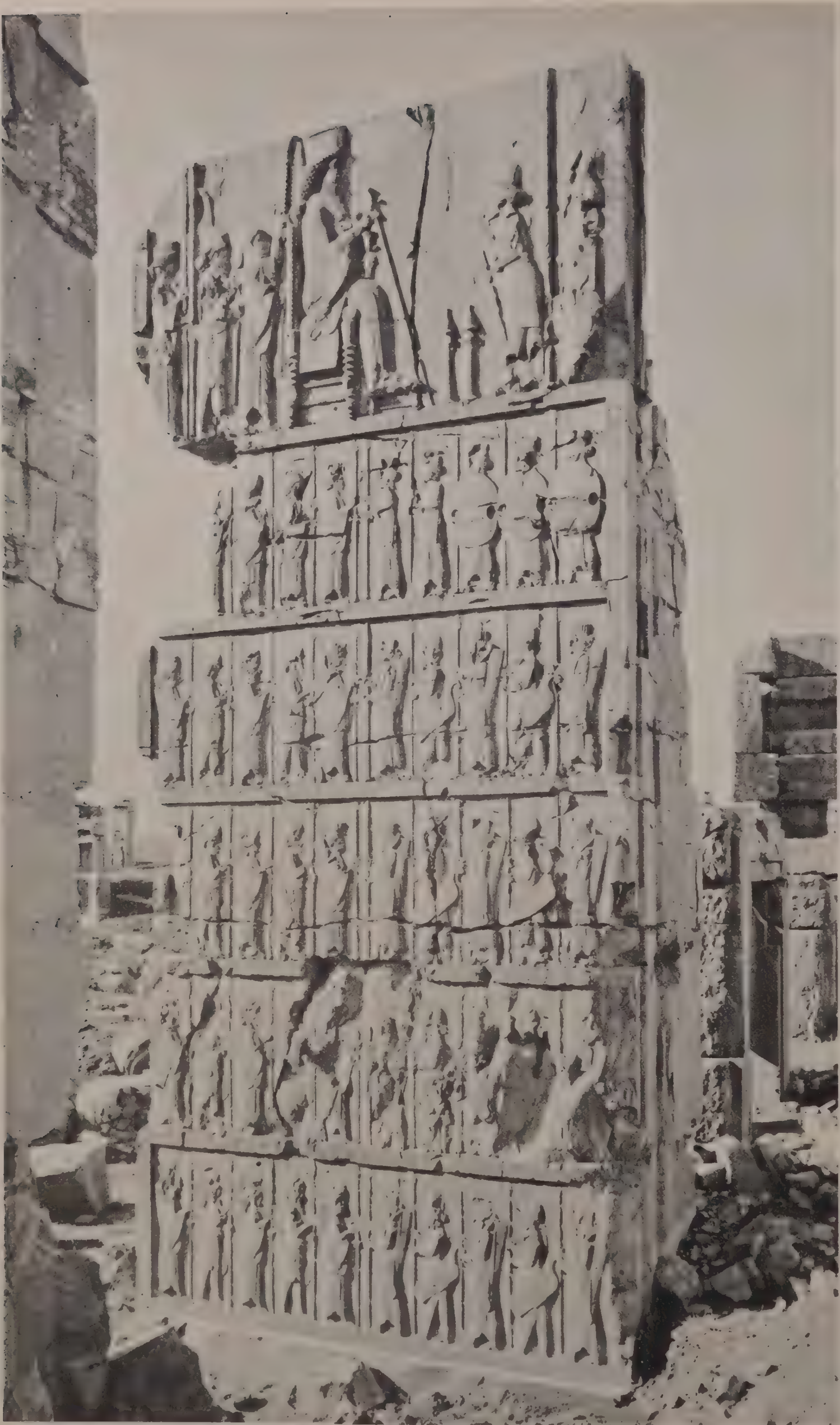




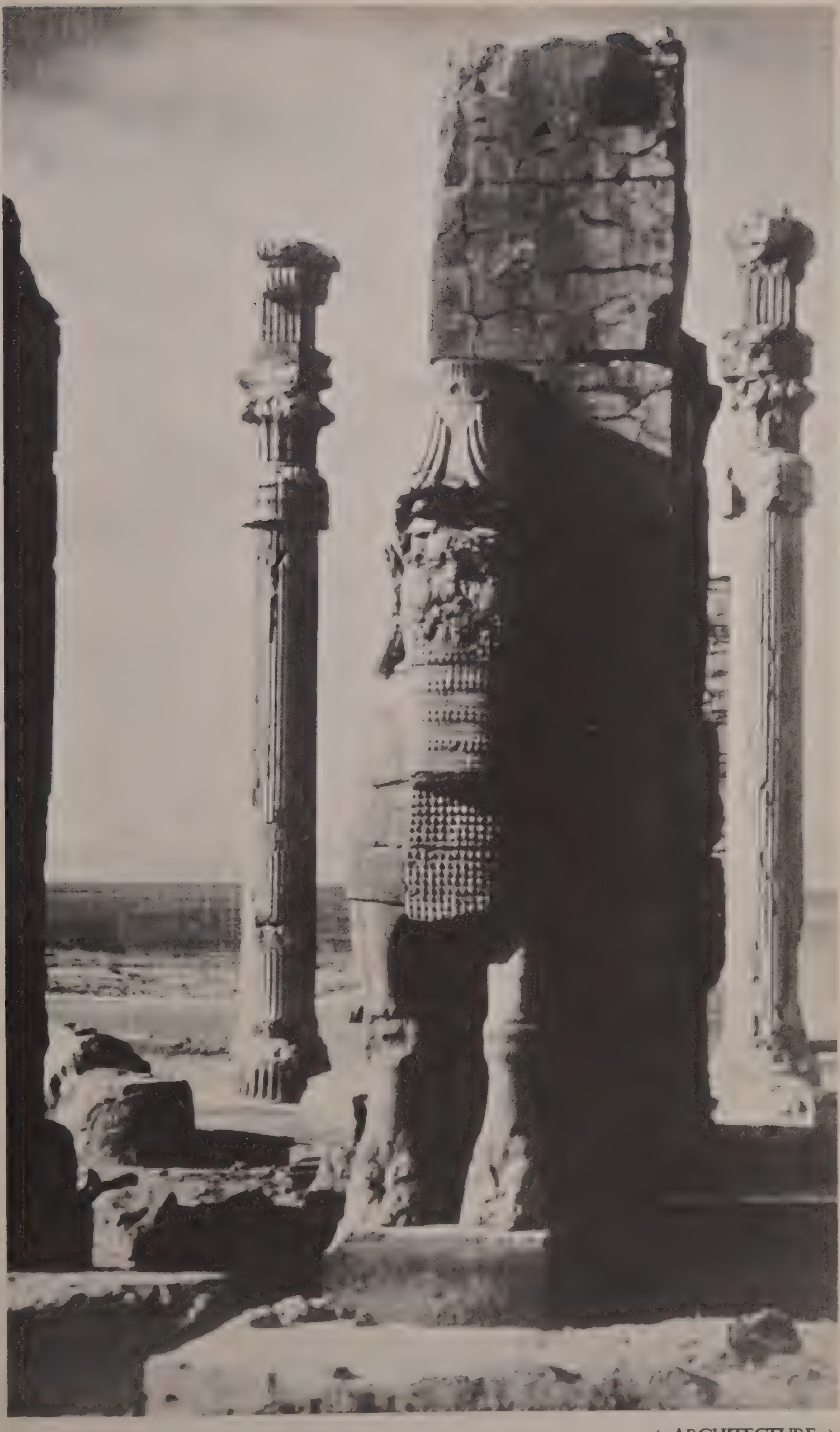
The photographs on this and the five following pages record in part some of the researches and explorations of the Oriental Institute of the University of Chicago, an organization, as described by its director, Dr. James H. Breasted, "for the study of the rise of man from savagery to civilization." A motion picture for educational purposes has been prepared under Dr. Breasted's direction with the title, "The Human Adventure," from which these photographs are selected.

Above, the audience hall, constructed by Darius and Xerxes at Persepolis. The great double stairway records in sculpture a New Year celebration. On the right are shown Persian and Median guards; on the left, foreign peoples bringing their gifts to the Persian emperor. On the advanced cheek wall of the stairs in the left foreground are figures symbolic of Persian power. These stairs were used for the procession on the occasions of the New Year festival of the Persian emperors

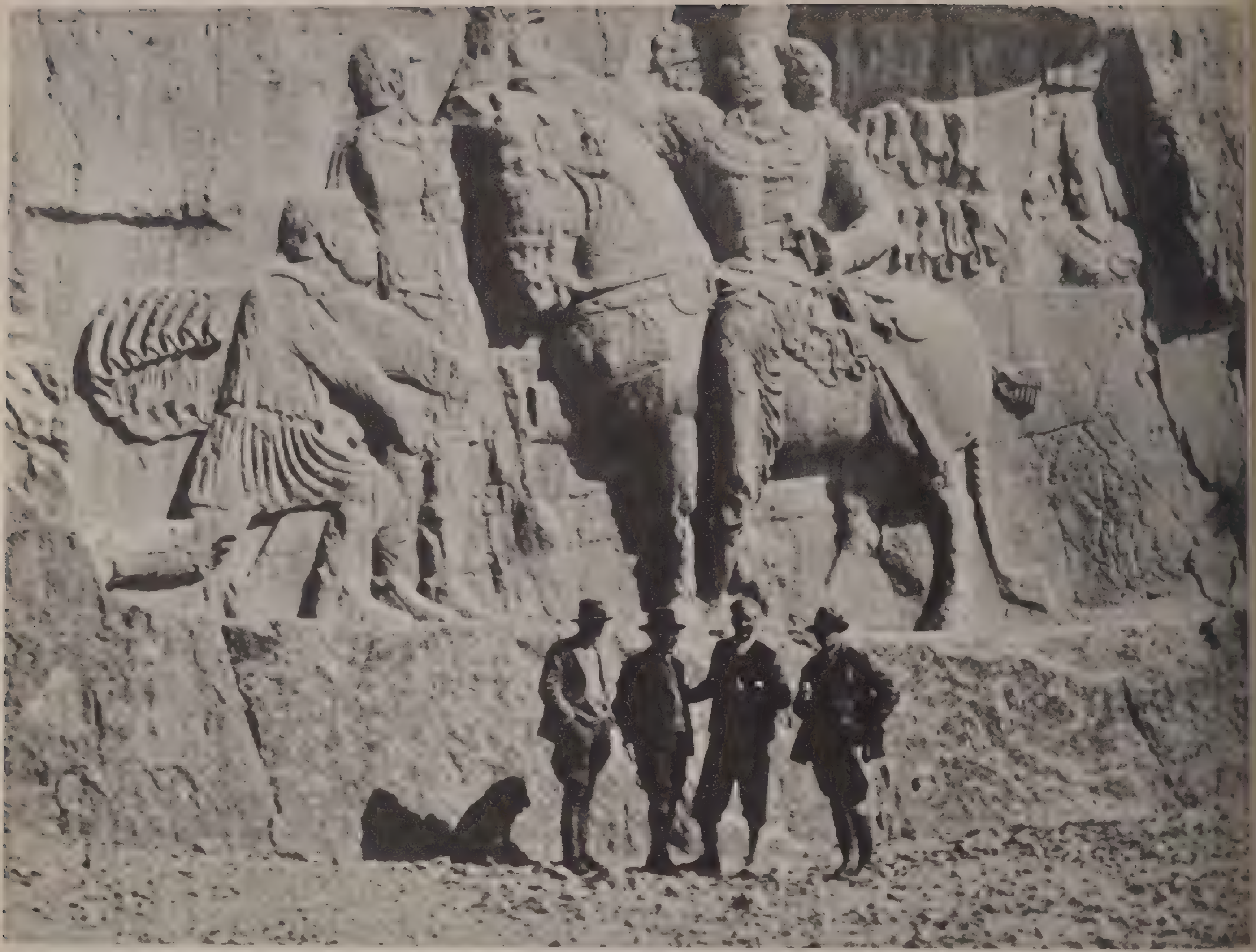
UNEARTHED AT PERSEPOLIS



A face of one of the doorways leading to the "Hall of One Hundred Columns" on the terrace at Persepolis. The Persian Emperor Xerxes (485–465 B.C.), seated on the throne, reviews his troops



To reach the terrace containing the series of palaces at Persepolis, one ascended the monumental stairway and passed through an entrance gateway which was flanked on either side by a colossal winged bull. The doors and columns of this entrance, built of stone, still stand. The adjoining structure of wood and brick was destroyed when Alexander the Great burned Persepolis in 331 B.C.



A detail from the rock-cliff wall of Naksh-i-Rustam, of which a more inclusive photograph is shown at top of page 253. This bit, the scale of which is indicated by the archæologists, is just to the right of the tomb of Artaxerxes I. The Persian king, Shapur I, seated on his horse, is receiving the submission of the defeated Roman Emperor Valerian who reigned from 253 to 260 A.D.

BOOK REVIEWS

THE HEART OF ENGLAND. By Ivor Brown. Foreword by J. B. Priestley. 120 pages, 5½ by 8½ inches. Illustrations from photographs, with color frontispiece. Printed in Great Britain. New York: 1935: Charles Scribner's Sons. $2.75.

A recent addition to The English Countryside Series. It is not particularly architectural, nor does it emphasize, as most of the other volumes have, the pictorial aspect of the British Isles. Here, instead, is an introduction to more personal matters—the markets and mills, education, recreation, the seaside, the suburb. The illustrations, as throughout this series, are especially good and plentiful.

MODERNIZING THE KANSAS HOME. By H. E. Wichers. 133 pages, 6 by 9 inches. Illustrations from drawings and photographs. Bulletin No. 32. Pamphlet binding. Manhattan, Kan.: 1934: Kansas State College.

REPORT ON SIGNIFICANCE OF TESTS OF CONCRETE AND CONCRETE AGGREGATES. Foreword by R. W. Crum, A. T. Goldbeck, and F. H. Jackson. 123 pages, 6 by 9 inches. Illustrations from graphs. Pamphlet binding. Philadelphia: 1935: American Society for Testing Materials. $1.25; $1 to A. S. T. M. members.

An effort to meet the need for an effectual summation of the significance of tests concerning concrete and aggregates—tests which have been made by many authorities and in rapidly growing numbers during recent years.

STONES OF RIMINI. By Adrian Stokes. 264 pages, 5¼ by 8 inches. Illustrations from photographs. Printed in Great Britain. New York: 1935: G. P. Putnam's Sons. $3.

A sympathetic appreciation of Agostino's sculpture in the Tempio Malatestiano at Rimini, as an accompaniment to the theme that carved limestone expresses more fully, perhaps, than any other single thing, the spirit of Mediterranean art and life.

HARVARD CITY PLANNING STUDIES.
8. BUILDING LINES AND RESERVATIONS FOR FUTURE STREETS. Their Establishment and Protection. By Russell Van Nest Black. Assisted by Mary Hedges Black. Preface by Theodora Kimball Hubbard and Henry Vincent Hubbard. 243 pages, 7 by 9¾ inches. Illustrations from plans and photographs. Cambridge, Mass.: 1935: Harvard University Press. $3.50.

It would not perhaps be seriously questioned if one said that the crux of all city planning in this country has to do with the unsnarling of our horse-and-buggy street system. The present volume, therefore, concerns itself with this question of building lines and the relative merits of procedures against these, based on eminent domain and the police power, with summaries and analyses of significant court decisions.

LABORATORY TESTS OF THREE-SPAN REINFORCED CONCRETE ARCH SLENDER PIERS. By Wilbur M. Wilson and Ralph W. Kluge. 134 pages, 6 by 9 inches. Illustrations from diagrams, graphs, and photographs. Bulletin No. 270. Pamphlet binding. Urbana, Ill.: 1935: University of Illinois. $1.

MODERNIZING BUILDINGS FOR PROFIT. By Kenneth Kingsley Stowell. 231 pages, 9 by 12 inches. Illustrations from photographs and plans. New York: 1935: Prentice-Hall, Inc. $6.50.

A case history of modernization in the present tempo, when improvement and economics go hand in hand. There are check lists of items to be considered in the various classes of buildings to be modernized, analyses of financial set-ups, procedure, and the case histories themselves of specific projects, freely illustrated before and after. Much of the material has appeared in *The Architectural Forum*, *The Architectural Record*, and *Hotel Management*.

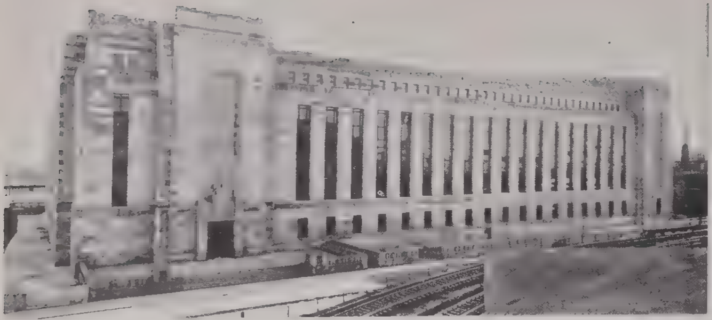
ATMOSPHERIC EXPOSURE TESTS ON NONFERROUS SCREEN WIRE CLOTH. By G. Willard Quick. 35 pages, 6 by 9¼ inches. Illustrations from graphs and photographs. Research Paper RP803. Pamphlet binding. Washington, D. C.: 1935: U. S. Department of Commerce. 10 cents.

THINGS TO MAKE AND HOW TO MAKE THEM. By William W. Klenke. Illustrations from photographs and working drawings. Pamphlet binding. Vol. 1, 63 pages, 7½ by 10 inches; Vols. 2, 3, and 4, each 32 pages. Peoria, Ill.: 1935: The Manual Arts Press. Vol. 1, 75 cents; Vols. 2, 3, and 4, 50 cents each.

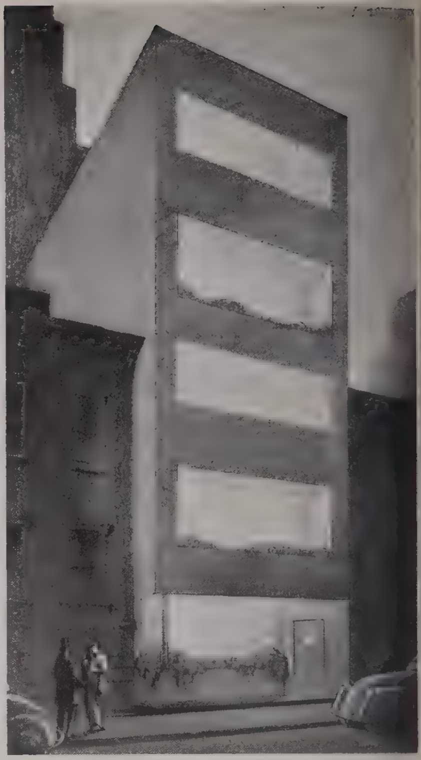
A series of booklets designed for the use of the amateur craftsman. The series consists at present of four booklets: *The Home Workshop* (1), *Things to Make for the Camp and Game-Room* (2), *Things to Make for the Lawn and Garden* (3), *Things to Make for the Home* (4). No. 1 of the series contains specific instruction for the home craftsman, and advice as to the most up-to-date equipment in tools and apparatus.

LEWIS' NEW AIR CONDITIONING FOR COMFORT. By Samuel R. Lewis. 277 pages, 5½ by 8½ inches. Illustrations from diagrams, graphs, and a folding psychrometric chart. Chicago: 1935: Kenney Publishing Co. $2.50.

The author is a consulting engineer in air-conditioning work and a past president of the American Society of Heating and Ventilating Engineers. His book is the second edition, rewritten and enlarged, of the volume published in 1932. It is written not only as a textbook for school use, but a reference and handbook for the architect and engineer. The procedure of designing systems for residential use or for larger buildings is shown in detail.

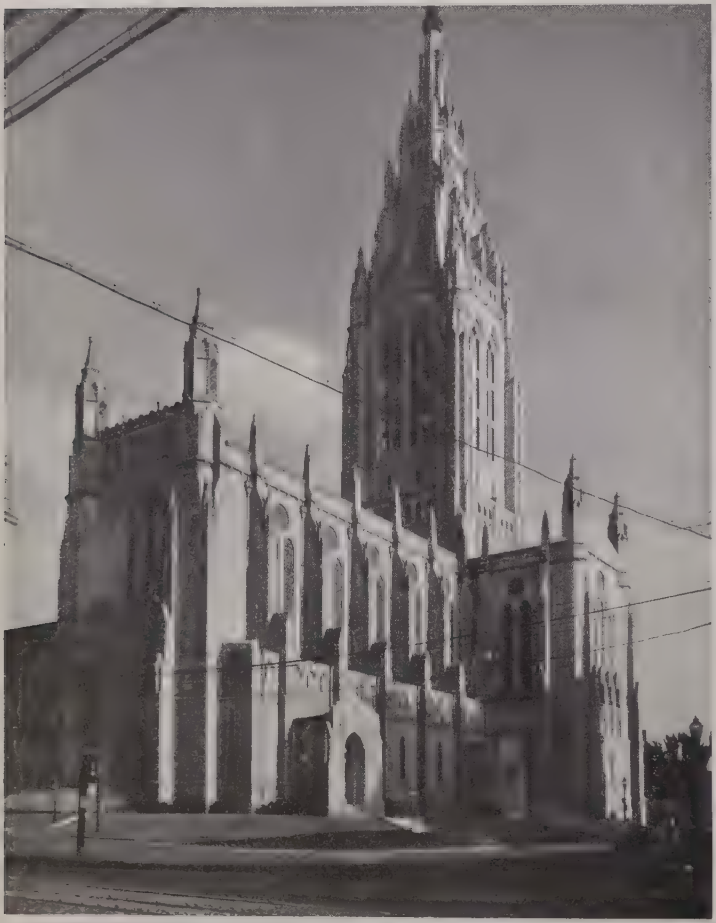


An unflattering photograph of Philadelphia's new $5,000,000 post office, begun in 1932 and recently finished. It is said to be the only post office in the world that can be reached by air, land and water. Rankin & Kellogg; Tilden, Register & Pepper, architects

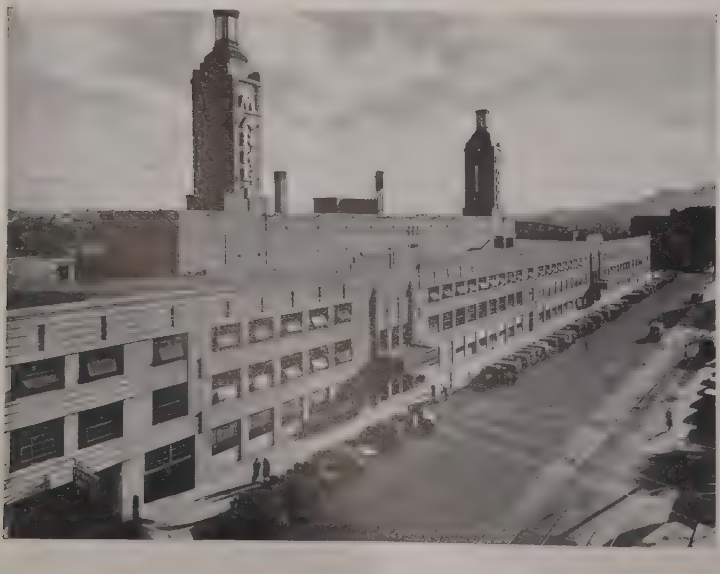


Now nearing completion on East 49th Street, New York City, is this apartment building of glazed blue brick and glass brick. Morris B. Sanders, architect —and he will occupy half of it

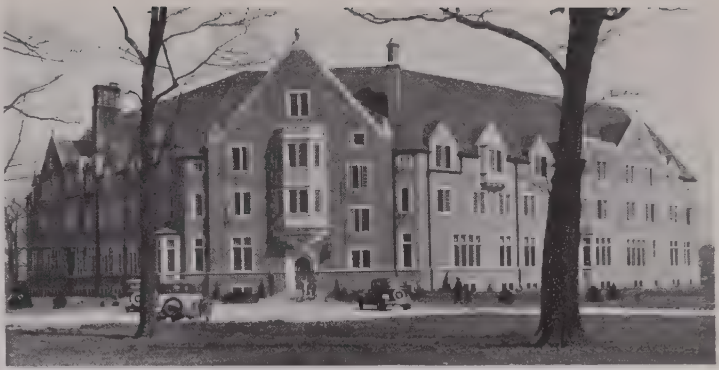
ARCHITECTURAL



Ecclesiastical work has not been entirely missing from our depressed building activity, as witnessed by the new East Liberty Presbyterian Church in Pittsburgh. Cram & Ferguson, architects



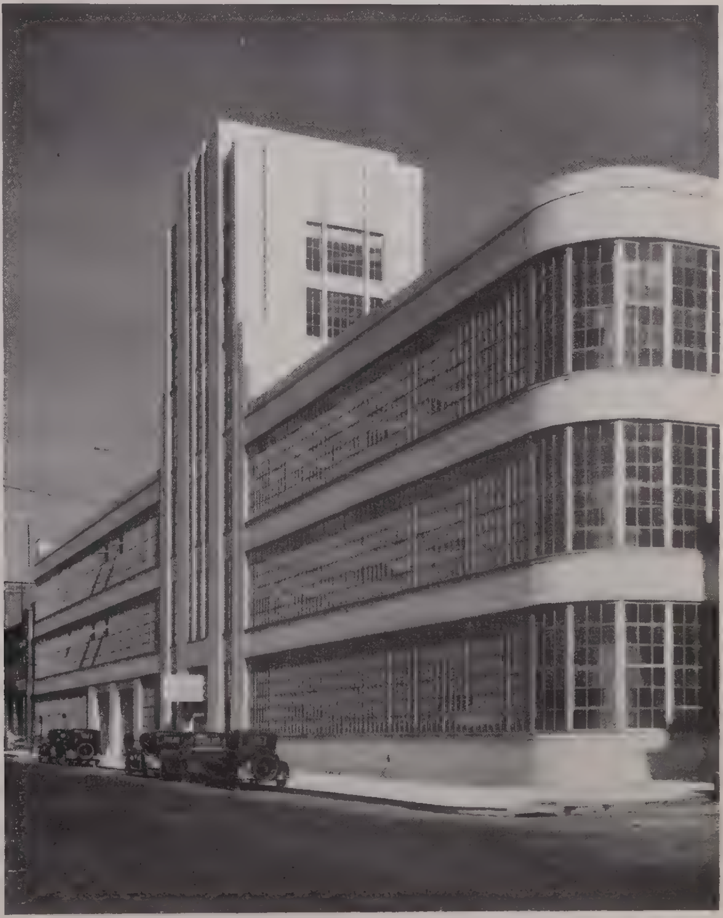
One of the first R. F. C. projects in the Northwest — the Portland Public Market, Portland, Ore. It cost, with fixtures, about $900,000. Lawrence, Holford & Allyn, architects



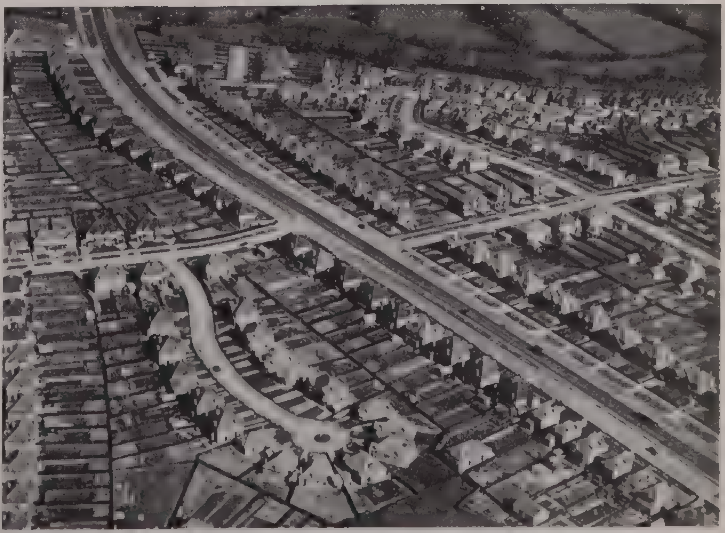
One of the P. W. A. educational projects — a fireproof girls' dormitory for Purdue University, West Lafayette, Ind., for which the allotment from P. W. A. was $178,000. Walter Scholer, architect

And now the police information booth takes up bright metal and corner windows in a serious way. It is in Canton, Ohio, and was presented to the city by a group of manufacturing and equipment concerns

NEWS *in* PHOTOGRAPHS



The new Cashman Laundry, New York City, in which the supporting piers are set back from the front walls. Russell G. and Walter M. Cory, engineers



While we are holding conferences on the subject of housing, England is building it. The photograph shows an aerial view of a detached-house group near London. It is bisected by the Kingston By-pass Road

Classification of Buildings	*Aug., 1915*	*Aug., 1920*	*Jan. 1, 1921*	*Aug. 1, 1921*	*April 1, 1922*	*Dec. 1, 1922*	*Jan. 1, 1924*	*Feb. 1, 1925*	*Feb. 1, 1926*	*Feb. 1, 1927*	*Jan. 1, 1928*	*Jan. 1, 1929*	*Jan. 1, 1930*	*Jan. 1, 1931*	*Jan. 1, 1932*	*Jan. 1, 1933*	*Jan. 1 1934*	*Jan. 1935*
FACTORIES AND WAREHOUSES:																		
Fireproof (Under 300,000 cu. ft.)	.14	.31½	.23	.18	.17	.21	.24	.23	.22½	.23	.22	.22	.22	.16½	.15	.14	.16	.16½
Fireproof (Over 300,000 cu. ft.)	.12½	.29	.21	.17	.16	.19½	.23	.22	.21½	.22	.21	.21	.21	.16	.14½	.12½	.14	.15
Mill Construction	.10	.22½	.15½	.12	.11	.14	.16½	.16	.16	.16½	.15¾	.15¾	.15½	.11½	.11	.10	.11½	.12
Ordinary	.09	.21	.15	.12	.10½	.13½	.15	.14½	.14	.14½	.14	.14	.13½	.10	.09½	.08½	.09½	.10
Frame	.07½	.17	.12	.10	.08	.11½	.13	.11	.10½	.10½	.10	.10	.10	.07½	.07	.07	.08	.08½
STORES:																		
Fireproof	.23	.52	.39	.31	.30	.36	.41½	.40	.39	.39½	.38	.38	.38½	.30	.29½	.26	.30	.31
Ordinary	.16½	.37½	.26½	.21	.19	.24½	.28	.26½	.26	.26½	.25½	.25½	.25	.20	.19	.16½	.20	.21
Flats (Above Ordinary)	.22	.48½	.34	.27	.23	.30½	.31	.29	.28	.28½	.27½	.27½	.27	.22	.21	.18½	.21	.22
Ordinary without Basements	. .	....	....	.16¾	.16	.18½	.21	.19	.18	.18	.17½	.17½	.17	.14¼	.14	.12	.14	.15
CHURCHES AND THEATRES:																		
Fireproof	.18	.40½	.35	.28	.27	.32½	.37½	.36	.35¼	.36	.34¾	.34¾	.35	.27	.26	.22½	.26	.27
Ordinary	.15½	.35	.24½	.19	.18	.22	.28½	.27½	.27	.27½	.26½	.26½	.26	.20½	.19½	.18½	.21	.22
OFFICE BUILDINGS:																		
Fireproof	.30½	.68½	.54½	.44	.35	.51	.54½	.52	.51	.51½	.49¾	.49¾	.50	.39	.37½	.32½	.37½	.39
Ordinary	.22	.48½	.34	.27	.25	.30½	.35	.33½	.32¾	.33¼	.32	.32	.32	.25	.24	.21½	.25	.26½
HOTELS:																		
Fireproof	.33½	.75½	.58½	.45	.37	.52	.59½	.57	.56	.57½	.55½	.55½	.56	.42¾	.42	.37½	.43	.45
Ordinary	.29½	.66½	.46½	.37	.26	.43	.43	.34	.32	.32½	.31¼	.31¼	.31	.25½	.24	.21½	.25	.26½
SCHOOLS:																		
Fireproof	.22	.48½	.40½	.32	.30	.37	.45½	.43½	.42	.43¼	.40	.40	.40	.32	.30	.27	.31½	.33
HOSPITALS:																		
Fireproof	.32	.72	.54	.32	.33	.37	.45½	.43½	.42	.43¼	.45	.45	.45	.32	.32	.27¾	.32	.33½
ALL STEEL BUILDINGS:																		
Under 20,000 cu. ft.	.12	.25	.21	.17	.15	.19½	.20	.14	.13½	.13½	.13	.13	.13	.11	.11	.10	.11½	.12
20,000 to 100,000 cu. ft.	.08	.18	.15	.12	.10	.14	.14½	.12	.11	.11	.10½	.10½	.10½	.10	.10	.09	.10	.10½
Over 100,000 cu. ft.	.06½	.14	.13	.10	.08	.11½	.11½	.10	.09½	.09½	.09	.09	.09	.07	.07	.06½	.07	.07½
APARTMENTS:																		
Fireproof	.35	.78	.54	.43	.36	.50	.55	.52½	.51	.52	.50	.50	.50	.39	.37½	.34	.39	.41
Protected	.29½	.66½	.46½	.37	.30	.43	.48	.46	.45½	.46	.44¼	.44¼	.45	.34½	.34	.30	.34½	.36
Brick (Ordinary)	.28	.63	.43	.34	.23½	.39½	.34	.32	.30	.30½	.29½	.29½	.29	.24	.23	.22	.25	.26½
Brick (Veneer)	.24	.54	.37	.30	.22	.34½	.32	.30	.29	.29	.28	.28	.28	.22½	.22	.21	.24	.25½
RESIDENCES:																		
Brick	.30½	.68½	.48	.38	.33	.45	.48	.46	.45	.45½	.44	.44	.44½	.34½	.33½	.25½	.29	.31
Brick (Veneer and Stucco)	.24	.54	.37	.30	.24	.34½	.34	.32½	.32	.32	.30¾	.30¾	.30½	.24	.23	.22½	.24½	.25
Frame	.21½	.48½	.34	.27	.19	.30½	.30	.26½	.25	.25	.24	.24	.24	.20	.19	.19	.21	.21½
Frame (Not over 25,000 cu. ft.)	....	....	....	....	....	....	....	....	....	.20	.20	.20	.20	.15	.15	.14	.16	.17
Cinder Concrete Block	....	....	....	....	....	....	.41½	.39	.38	.38	.36¾	.36¾	.37	.29	.28	.22½	.26	.27
GARAGES:																		
Gas & Service Sta.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.21½	.25	.26½
Fireproof	....	.30	.23	.18	.17	.21	.24	.23	.22½	.23	.22¼	.22¼	.23	.17	.17	.15½	.17½	.18
Mill Construction	....	.20	.15	.12	.11	.14	.16	.15	.14	.14½	.14	.14	.13½	.11	.11	.10	.11½	.12
Ordinary	....	.17	.14	.11	.10	.13	.15	.13½	.12½	.13	.13	.13	.13	.10	.10	.09	.10	.10½
Frame	....	.14	.12	.09	.08	.10½	.12	.10	.09½	.09½	.09	.09	.09	.08	.07	.06½	.07½	.08
SHEDS WITHOUT HEAT:																		
Enclosed Without Floor (Frame)														.04¾	.04½	.04	.04½	.05
Enclosed (Frame)														.06	.06	.05	.06	.06½
Enclosed (Ordinary Construction)														.09½	.09¼	.09	.09½	.10½
Enclosed Without Floor (Ordinary Construction)														.09¼	.09	.08	.09½	.10
Enclosed (All Steel)														.04½	.04½	.04	.04½	.05
Enclosed Without Floor (All Steel)														.03½	.03½	.03¼	.04	.04
Open Shelter (Frame Construction)														.03	.03	.03	.03	.03½

© 1935 by Detroit Real Estate Board

The figures represent cost per cubic foot in cents. Annually since 1915 the Detroit Real Estate Board has compiled these schedules, the present one revised as of January 1, 1935. Costs include architects' fees and contractors' profits and represent the minimum for fairly good building, economically designed, constructed under favorable circumstances, within the Detroit district

UNIT COSTS

BETTER PRACTICE

By W. F. Bartels

RENOVATIONS

IN modernization or renovation the architect is confronted with one of the most interesting phases of his profession. Yet from the point of view of his client's pocketbook it is the most uncertain. He must treat the problem in a way that will not only appeal to the owner's æsthetic sense, but will also appeal to his pecuniary sense. Owners of old buildings do not care particularly about drawings and specifications as an end in themselves, and unless the architect can produce a plan and financial set-up which shows an income from the investment, there is no reason why the owner should put more of his money in it. It is well to remember that on a new building a profit is taken for granted, while on a renovation it must be proven that a profit is to be had.

While it is desirable for the architect to stay in his own field and not venture into that of the realtor, as some have done to their sorrow, it is incumbent upon him to be ready at all times to give unbiased views to the owner. He may have to deprive himself of a commission by admitting that the building does not warrant the proposed expenditures, or that it may be cheaper and more expeditious to build an entirely new one in place of the old. He must have the ability to perceive what will appeal to the type of tenant it is intended to attract, and incorporate these features into his building.

Too many architects treat the problem of renovations too academically. Unless the problem is met in a realistic, practical manner, the builders will take it out of the architects' hands just as they did small houses. Even now it is questionable whether this has not started.

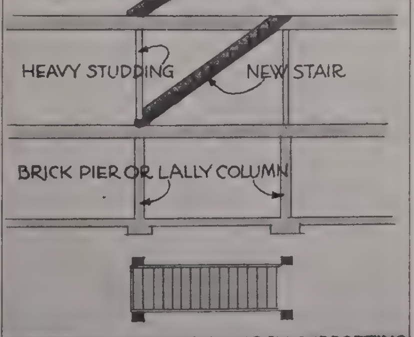
Perhaps one of the best ways to approach the problem of renovations is for the architect to imagine he has inherited an old building and to go about its renovation as though he were paying for it himself, with the future rentals his only source of income.

Much work is necessary to prepare an adequate set of plans and specifications for any renovating job, and if the architect is to confine himself in many cases to what has been termed "the standard percentages," he is apt to find when he has completed the work that this is entirely too small an amount to pay him a living wage. It might be suggested that when the calculation of a fee is difficult if not impossible, the architect may find it more profitable to do the work on an hour or day basis, the owner paying all costs, such as draftsman's time and blue prints, plus a certain stipulated amount toward office overhead, etc.

1—SPECIFICATIONS

A complete specification is more necessary in a modernization job than it would be on a new one. Many items must be taken into consideration which would be taken for granted in new work. The trades must be united in order that the building be finished completely as planned, and that there be no overlapping of trades or work omitted. It is out of place to call for the highest grades of material when the building itself is of mediocre type. The competition for work in this class is very keen, and the chances are that substitutes would be furnished for the high-priced articles anyway. The architect, in order to afford the greatest saving to his client, must consider the use of material salvaged from the job, but at the same time must be assured that it will be suitable and will in no way detract from the work when the job is finished. Such items as the amount of plaster to be replaced must be considered before completing the specification, but this is difficult to compute; not only is the architect faced with the need of describing the extent of new work to be done, but also that which may prove unsound upon further examination, not to mention that which may fail during the course of construction due to vibration, etc. Whenever possible, phrasing should be explicit and not such as: "Pipe to be of sufficient size to give ample supply of water at all times." Pipe sizes should be given definitely. Other pipes, such as existing ones for leaders, smoke stacks, etc., should be carefully investigated to make certain that they are of sufficient thickness and will not have to be replaced for a reasonably long time.

2A—SUPPORTING NEW WORK



PREVENT UNDUE SAGGING BY SUPPORTING NEW WORK FROM FOUNDATIONS ON UP

2—STRUCTURAL

Many buildings now considered obsolete are perhaps physically more sound than some erected in the boom years. However, precautionary steps should be taken to prevent any sagging or any undue deflections when new weight is added. This new weight may consist of new iron stairs, tile floors and insulation, or new plastered partitions. The weight of these in many cases may be supported by a brick pier or lally column in the cellar, and heavy studding carried up through the rest of the building (Fig. 2A).

Many old beams will be found to be in good condition except that they may be seriously weakened by mortises.

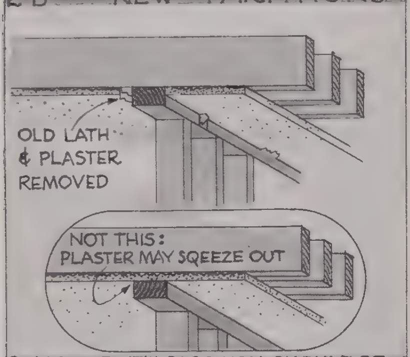
Partition work in cellars or basements should be confined to brick or terra-cotta; gypsum block should not be used here because of the effect dampness has upon it.

Where new beams are used for filling an opening created by alteration work, they should be supported by bridle irons. Where plates are used for new partition work it is preferable that they be placed in direct contact with the beams, and not under the plastered ceiling, as is done in many instances. If done in the latter manner the partition is no support to the floor above, because the plaster would squeeze out if any weight were imposed upon it (Fig. 2B).

Where it is impossible to fill out brick walls or other masonry work with brick or split furring, it is more desirable that furring channels be used and wire lath and plaster be applied. This is better than having a considerable thickness of plaster on the brick wall (Fig. 2C).

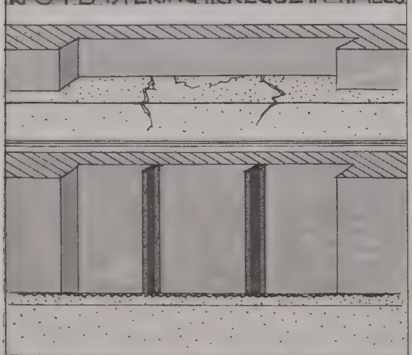
When new steel stairs are installed they should be set on steel plates on the beams, and in no case should they be shimmed up with wood. New openings, such as those for disappearing steps to attics, etc., should be properly framed with doubled headers and trimmers spiked together, the headers and tail beams to be in bridle irons.

2-B NEW PARTITIONS



PLATES OF NEW PARTITION SHOULD BE DIRECTLY UNDER JOISTS, FOR BEARING

2-C PLASTERING IRREGULAR WALLS



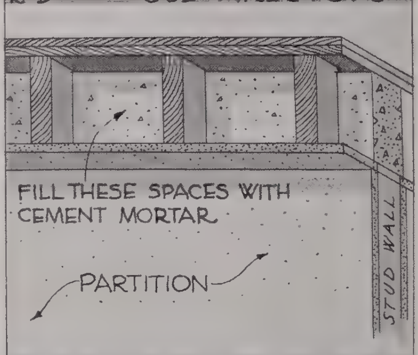
PLASTERWORK SHOULD NEVER BE THICK USE FURRING CHANNELS & WIRE LATH

Where halls and stairs are fire-retarded, such as are required for the old-law tenements in New York City, it must be remembered that fire stops must be included in order to prevent the spread of any fire in the partition. This is generally done by filling in these spaces with incombustible material (Fig. 2D). Where the hall side of the partition is to be cement-plastered or wire-lathed, and the space between filled with mineral wool, care should be taken in removing the outer coat of plaster to see that the key of the plaster on the apartment or inner side of the partition is not injured.

Where head-room is low, or it is desired to conceal pipes in the corner, a furred beam effect may be resorted to if the pipe is properly covered and supported; and if the furred portion is properly wire-lathed there is no reason why it should not be satisfactory (Fig. 2E).

Every effort should be made in laying out new work to get the doors as wide as possible. This is particularly true of apartment entrance doors, where failure to observe this may prevent furniture from being moved in. As one architect has said: "It is often a problem to get furniture in, but any installment house will be able to get it out." Should the architect permit old doors to be used, he must see to it that doors of only one type are allowed in one apartment. Where floors have sagged, it is often possible to bring down the trim without seriously disturbing the framing of the door (Fig. 2F). Where steel bucks are used in connection with new work, they should be set down to the rough flooring if possible. Thus they may be more securely anchored at the bottom than would be possible if they were merely set on the finished floor (Fig. 2G.)

2-D USE FIRESTOPS



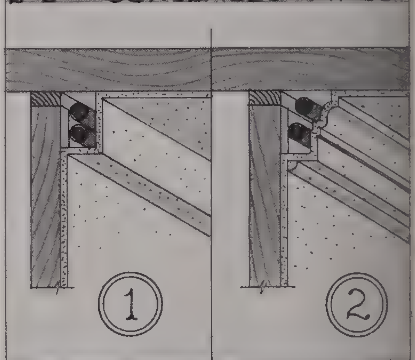
FIRESTOPS SHOULD BE USED OVER ALL HALL AND STAIR PARTITIONS

Where any carpentry work is done in a house or apartment it is advisable to see that all sash and frames are in good working order. It must be kept in mind in apartment-house work that the window openings bear a direct relation to the floor area, and that this proportion of 1 to 10 must be carefully observed if one is to avoid trouble with the local ordinances. Should the floor area exceed this proportion, a closet carried to the ceiling will of course cut down floor area and so render the room properly within the law.

Marble bases set in halls and bathrooms should be set on the rough and not on the finished floor. In the latter position they are apt to work loose. Old fireplaces and flues must be carefully inspected before they are allowed to be used, because in many cases they may have developed countless void spaces between the bricks; in but few cases were old flues properly lined with tile, and thus they always present a danger from fire. Furthermore, many times they are used for other supporting members, a condition which should be rectified.

The roofs, before being recovered, should be properly repaired so that they pitch away from bulkheads and skylights. Many old buildings have low or even no parapet walls; in such cases they should either be built up, or guard rails put across the edge of the roof to prevent any one from falling down. The old-fashioned, cumbersome cornices on many buildings have become outmoded and present difficult and expensive features to repair. Many architects have found that these may advantageously be removed and parapets properly built up and water-proofed at a cost less than the repair of the old cornices.

2-E CONCEALED PIPES



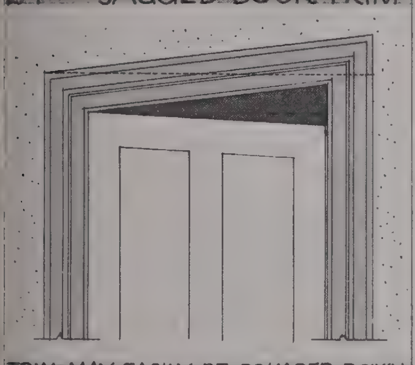
FALSE BEAM CAN CONCEAL NEW PIPES

PIPES MAY RUN IN A PLASTER CORNICE

3—HEATING, PLUMBING, AND ELECTRIC WORK

Probably one of the most common conditions the architect has to correct in a rehabilitation job is that of revamping the steam system so that the occupants of the building will be comfortable in winter. All too often the steam job was put in by a speculator, or by a person not having sufficient knowledge of steam, with the result that the old work will not be properly laid out. Hence it is doubly necessary that the architect should be careful in awarding this contract. Too often an owner, annoyed by complaints of insufficient heat, will put devices on his furnace such as blowers, regulators, etc., when the real cause may be a boiler that is too small, an undersized flue, trapped lines, insufficient radiators, or one of the many other elusive causes resulting in a lack of heat. The architect may not only help his client save money, but also enable the building to produce a better income, by providing an efficient heating system. It is well for him first to check up to see if the rated capacity of the boiler is equal to, or better than, the amount of standing radiation, plus about 25 per cent for piping, etc. If this is not the case, no amount of gadgets will make an efficient job. Any so-called "coal-saving" device used on a small boiler may not only fail to save money, but in all probability it will waste fuel by forcing the gases up the chimney before they have been completely burned.

2-F SAGGED DOOR TRIM



TRIM MAY EASILY BE SQUARED DOWN. OLD DOORS SHOULD BE TRUED TO FIT.

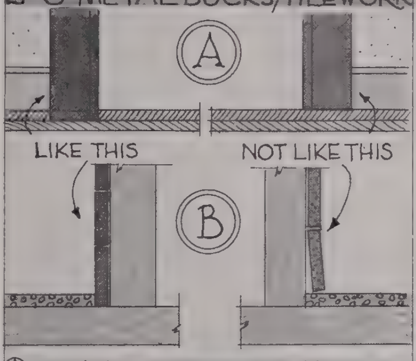
Cellar lines should be checked to see that they have the proper pitch. Should it develop that there is sagging, with the possible presence of a water trap, the line may be broken, dripped and vented, thereby rectifying this condition (Fig. 3A). In doing this, only unions and flanged connections should be used. New return lines should not be buried in solid partitions or in concrete. They must be allowed to move freely and should be in an exposed place so that repairs may be made quickly. Where rising lines are carried up through a building, the architect should insist that circular saws be used, so that as little damage as possible be done to the old work (Fig. 3B).

Where swings in piping are made they should be in the floors as well as in the run-outs.

Radiators should not be connected from what might be termed the "wrong side," even at the risk of putting the valve in an inconvenient position, or of using a radiator of different size (Fig. 3C). Radiators should not be installed against walls or partitions where it is at all possible to get them under windows.

In the installation of new steam plants, there is always the temptation for the owner to install a steel flue at one-third the cost of a tile-lined brick one. The architect should warn him that the cost will be more in the long run. The steel soon rusts out, and its inefficiency due to chilling causes excess use of fuel. If a steel flue must be used it should be of such gauge that it will last a reasonable length of time.

2-G METAL BUCKS, TILEWORK

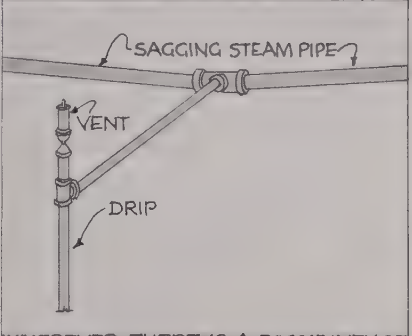


Ⓐ ANCHOR METAL BUCK BELOW FIN FLOOR
Ⓑ START TILEWORK BELOW FINISHED FLOOR

An important provision for the architect to include in the plumbing contract is one requiring the plumber to clean out all area drains and traps, and to install proper drains in areaways and at the bottom of steps open to the weather. Most old drains are filled with sediment and probably would cause trouble in a short time.

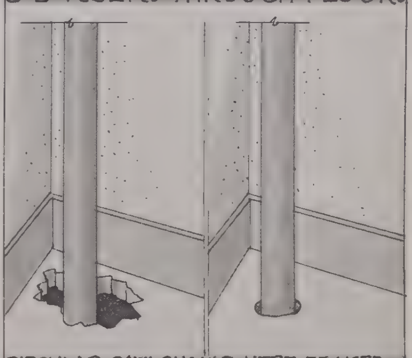
New soil lines should be securely joined to old ones by means of the proper fittings. One of the cheaper and less expensive methods is often used by unscrupulous plumbers. This consists of putting a saddle on the old line and running the new one into it at this point (Fig. 3D). The danger lies in the fact that waste matter may catch on the rough edges, which it would not do if the proper fitting were used. The danger of stoppage is also prevalent where galvanized lines are used on 2" wastes, more particularly where the fixtures are back to back. If the galvanized line is not properly reamed, a stoppage will soon occur, with the embarrassing situation of water going into one apartment from the other when tubs are emptied (Fig. 3E). The architect should investigate to see whether it would be cheaper to tear out old soil, waste and vent lines if new fittings are contemplated, because these lines may not be heavy enough to stand cutting. The open ends of all soil lines in exposed places, such as on roofs, should be covered by wire netting, or preferably goose necks, so that nothing can be thrown down them that will cause a stoppage.

3-A STEAM LINE SAG



WHEREVER THERE IS A POSSIBILITY OF A WATER TRAP, THE STEAM LINE MAY BE BROKEN, AND PROVIDED WITH DRIP & VENT

3-B RISERS THROUGH FLOORS



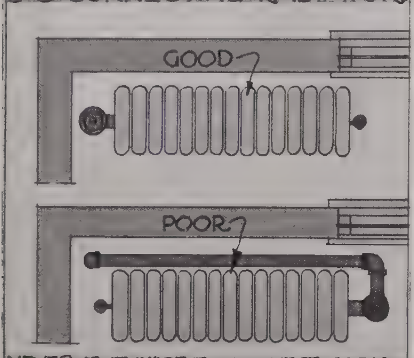
CIRCULAR SAW SHOULD HERE BE USED, TO DO AS LITTLE DAMAGE AS POSSIBLE

Where new toilets are installed against exterior walls in alteration work, the old windows may be low, with the result that if a low-down tank is used it may project in front of the window (Fig. 3F). This bad feature may be eliminated if flushometers are used, but these do not always result in a perfect solution either. It must be ascertained what the water pressure is in the street, and then deduct approximately 5 pounds per story to arrive at the pressure on this valve on the top floor. If this is near the capacity of the flush valve, care should be taken, because if a toilet is being used on the lower floors it means that the top flush valve will not function.

If space is limited in a bathroom, the architect should remember that lavatories only 15″ wide are now on the market. These must be securely fastened to the wall, so that leaning on them will not tear them loose. As long as the tile floor is level, ring safes are more desirable for toilets than are slabs which project beyond the foot of the bowl and either stain or give a dark appearance. However, it is advisable to use them only in fireproof buildings or where bathroom floors are on a concrete arch.

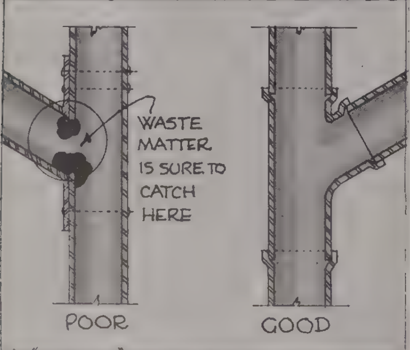
The architect should not overlook ventilation. No house or kitchen today is complete without an electric fan, and no city house of tomorrow will be complete, probably, without air conditioning. If the air-conditioning mechanism is not provided, ducts at least should be provided for its future installation. Where exhaust fans are placed in the kitchen, it is better that they be placed in a box in the wall, the inside and outside of which can be closed at will. A switch should be conveniently located to turn the motor on or off.

3-C CONNECTING RADIATORS



NEVER IS IT WISE TO CONNECT RADIATORS "FROM THE WRONG SIDE"

3-D JOINING SOIL PIPES



A: "SADDLE" CONNECTION: CHEAP, BAD
B: ALWAYS USE THE PROPER FITTING

Electric outlets should not be spared. By arranging them back to back, they are much less expensive. Electric wiring should be entirely renewed if the installation is very old. Even the slightest bending of very old wires will crack their insulation and make possible a short circuit or fire.

4—PROTECTION AGAINST ELEMENTS

The architect should impress upon his client the necessity for raking out and pointing up weathered brick joints. The cost will be repaid, because rain and dampness will be prevented from penetrating the interior of the building. Where brick and cement joints have become porous, it may be desirable to protect them with a coat of mastic. This is now available in color instead of the unsightly black that was formerly its only available color. Often a brush coat or two of Portland cement may be used where excessive pointing would otherwise be required.

The proper calking of windows is another item which should not be neglected. This is best done in most cases by use of a compressed-air gun, which forces the material deep into the crack or opening. At the same time the coping should be carefully inspected to see whether or not it is necessary to calk these joints. Should there be face brick on the front and common brick on the side walls, it may even be desirable to calk the joints where the two meet.

When weather-stripping is put on the windows, it is advisable to adjust the old stops, so as to reduce air leakage. At the same time that the weather-stripping is installed, it may be advisable to install new sash cord or chain. A considerable saving can be effected if this is done at the same time as the weather-stripping is added, because there is but little additional work involved in installing new chains once the sash are taken out.

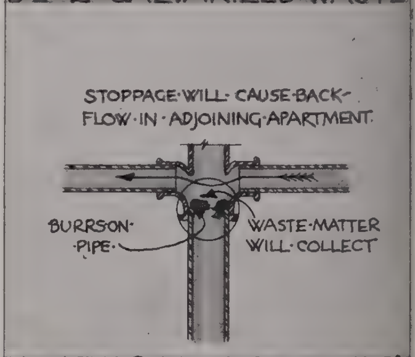
* * *

5—MISCELLANEOUS

Redecorating the exterior of a building probably is one of the most essential features of renovation. It may be done by painting or cleaning. The cleaning may consist of sand-blasting, or one of the other methods of washing, such as by hand or with steam. The architect must see to it that no reagents are used which will damage the surface of the building. Due care must be exercised when sand-blasting is used so that a gloss surface is not destroyed and a porous one left instead. Where a building has been painted before, it is seldom that sand-blasting will be satisfactory, unless great care is used to remove all particles of paint.

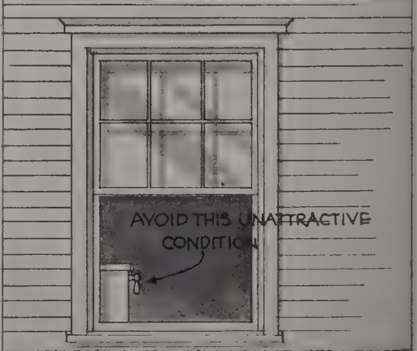
There is no doubt that the decorative effect of a building is an important factor. Lighting fixtures, closets, painting, etc., are among the least expensive items entering into the building, yet at the same time they produce the greatest comfort. Sufficient closet space, with commodious shelving, should be furnished. Radiators should be set in recesses wherever possible under windows. This can often be done in old buildings by removing the wood panel under the window-sills. New doors should preferably match the old ones, while the latter should be replaced by uniformly designed new ones. Excessive cornices over doors and windows should be removed and finished off with a small molding to give a trim effect. Cupboards can in many cases be modernized by replacing the glass with flush wood doors.

3-E 2″ GALVANIZED WASTE


STOPPAGE·WILL·CAUSE·BACK-FLOW·IN·ADJOINING·APARTMENT.
BURRSON·PIPE·
WASTE·MATTER WILL·COLLECT

WHEN FIXTURES ARE BACK TO BACK, 2″ WASTE PIPE SHOULD BE PROPERLY REAMED

3-F TOILET AT LOW WINDOW



FLUSHOMETERS MAY SOMETIMES BE USED WHEN TANK WOULD BE CONSPICUOUS

HOW SHOULD WE TEACH ARCHITECTURE?

By Dwight James Baum, F. A. I. A.

A PRACTISING ARCHITECT'S APPRAISAL OF THE NEW CURRICULUM AT SYRACUSE UNIVERSITY SCHOOL OF ARCHITECTURE

DURING the winter of 1872–73 a series of lectures was given under the auspices of Syracuse University on the Fine Arts, by Dr. George Fisk Comfort, a remarkable young man who, after several years of study abroad, implanted in this country the idea which finally culminated in the organization of the Metropolitan Museum in New York City. After this organization he returned to Syracuse, his native city, and, through the series of lectures before mentioned, created enough interest so that in the fall of 1873 there was inaugurated at Syracuse University the first College of Fine Arts in America. In June of that year the following paragraph was printed in a local paper:

FIRST ANNOUNCEMENT

THE COLLEGE OF FINE ARTS.—We are pleased to know and are no less pleased to announce that the above College will soon be instituted in connection with the University. Plans therefore are being developed and it is confidently expected that the College will be in operation within a year. It is already well known that the first course of lectures upon the Fine Arts ever instituted in the country was the one we had the pleasure of listening to last winter. Prof. Comfort is really getting to himself great credit for the energy with which he is consummating his plan of making Syracuse University the foremost of the American Colleges in the department of Art. Yale has its Art Building, but until this year there have been no particular efforts to give its students systematic instruction in æsthetics. Here we have had curriculum lectures all the year and these have been supplemented by a very interesting spec: a public course. Art is destined to receive more attention in College curricula than it has hitherto. The time is coming when Art Departments will be considered as necessary as any other department of a University. We say then to Prof. Comfort and to all who are interested in this movement toward the higher cultivation of æsthetic taste, let us have the course of Art enlarged and a College of Art established as soon as possible.

In October the following article was printed in *The University Herald:*

INAUGURATION

THE FINE ARTS COLLEGE.—The inauguration of the first College of Fine Arts in this country took place in the College Chapel Thursday evening, Sept. 18th. The Chapel was well filled with a fine and appreciative audience and the speeches were exceptionally good. The speakers were Rev. George Lansing Taylor, Revs. Calthrop and Beard of the city, and the Chancellor.

Owing to the suddenness with which this College was organized and the short time since its inception, nothing very definite can be given as to its prospects. We are informed, however, that the number of students will be fully as large as its projectors anticipated. Only the departments of Painting and Architecture are in working order at present; others will be added next year or before.

It is interesting to note that at that time the trustees commended this new college to the patronage of those interested in the progress of art, and hoped that it might become an agency in promoting the cultivation of fine arts which "have so much influence upon the culture, refinement and health of a nation." The courses first organized included Architecture and Painting. It is interesting to note that back in 1873 the College stated, in listing its first curriculum, that it included systematic and progressive instruction in the theory, history and practice of architecture and painting, and in those branches of science, philosophy, etc., which bear most intimately upon these arts, and without a knowledge of which success in the higher domains of art is impossible.

A four-year course in Architecture was established, giving a degree of Bachelor of Architecture, and this was the first degree of the kind given in this country. Many years have passed since this important inauguration, and yet this school has continued, with of course varied success, through the years in turning out students, many of whom have become well known, especially in the courses of Painting, Music and Architecture.

In this day of various "isms," the curricula of various schools of architecture have been changed in one way and another, sometimes in a manner to leave the poor student entirely bewildered. In some cases students have started school with a certain line of thought advanced by the faculty, and then were compelled practically to readjust most of their work, past and present. In endeavoring to teach so-called functionalism, which some instructors feel is new and yet really is old, radical arts have been implanted, and the fundamental principles of design have been so neglected that the poor student graduates with his head filled with "isms" and his background so meager that the four years he spent in college is practically a loss.

Having this in mind, and a desire for certain important changes in the department of architecture at the Syracuse College of Fine Arts, a new curriculum has been devised that seems to me the most sane and logical of any yet presented. Among the important features of this new program is a five-year curriculum incorporating a unified basic four-year academic program, and this is climaxed with a fifth year which forms a liaison between the school and practice. The fifth-year student presents an original program based upon realistic conditions.

Procedure on these problems is exactly as in a commercial office, considering the questions of site, finances, etc., as a part of his program. He really sets up a little office, playing at architectural practice, with direction of the proper sort, so that when he applies for a position after graduation he is familiar with office procedure and practice.

The major subjects taught are carefully grouped so as to enhance the efficient progress of the student to a degree of training which has not heretofore been accomplished in the accepted undergraduate curriculum. Another important change is that design and materials of construction are arranged in combination courses, and the latter study is strengthened by strong fundamental courses in engineering, and subjects relating to materials. During design criticism the construction staff also criticizes the problems. The work in freehand and cast drawing courses is to be of a creative nature, working in the arts and crafts, using architectural motives instead of just drawing from the cast. Courses in the theory of architecture are carefully planned to parallel strong supplementary courses in economics, sociology, business and finance. This curriculum, I believe, is unique and original in its philosophy, and carries through the modern progressive trend in teaching.

The department of architecture at Syracuse University has been aware of the necessity of keeping abreast of the times in architectural education and training. Recently Professor L. C. Dillenbeck, formerly head of design at the University of Illinois and head of design at Columbia, resigned from this latter connection and became head of design at Syracuse University. The director of this school, Professor Frederick W. Revels, and Professor Dillenbeck have been mostly responsible for this important revision in architectural teaching. Through the Dean of the College of Fine Arts and the faculty, this curriculum has been approved and goes into effect with the present fall session.

The development of architecture from the earliest times has been a continuous progression through the centuries, and architecture must be taught in the same manner, not throwing away the past, but carrying on the great traditions. It should not study the past in order merely to copy the forms and expressions, but to comprehend the spirit of the great architects and builders. It should use the past as a vehicle. Work today should express the spirit and interest of life as it is being lived. The new curriculum at Syracuse realizes that the architect must be the most fully trained man of the learned professions, because of the wide knowledge he must possess. Therefore the courses stress not only artistic ability but also the need of good construction and the conduct of professional practice in a businesslike manner. Both social and economic aspects of the many problems that he must meet are brought before the student, stressing the important position he must play in public life.

I have studied with considerable interest other architectural school programs, and later read criticisms of them and smiled over their subsequent apologies. I feel that the program instituted at Syracuse is probably outstanding among the new school curricula. Here are considered not only fundamentals, but the study of new methods in both design and construction which new modes of living and new materials have made necessary.

Here follows the new Syracuse curriculum:

ENTRANCE REQUIREMENTS

For five-year program:	UNITS
English	3
One Foreign Language	2
Plane Geometry	1
Solid Geometry	½
History	1
Elem. and Inter. Algebra	1½
Trigonometry*	½
Drawing (Fhd. or Mech.)	1
Physics	1
Total	†11½

* Trigonometry and Physics have been added to the entrance requirements.

† Three and one-half additional units (approved) must be offered from list of regular high-school subjects.

COURSE I
ARCHITECTURE
Leading to the Degree of Bachelor of Architecture

1st Semester *First Year*

Major Group I	HOURS
a. Elements of Design and Theory of Architecture	3
b. Introduction to Construction	1
Architectural Graphics (Des. Geom.)	3
Analytic Geometry	3
English I	3
French *or* Elective	3
Freehand Drawing	2
Total	18

2d Semester:

Major Group I	HOURS
a. Elementary Design and Theory of Architecture	3
b. Introduction to Construction	1
Architectural Graphics (S. and S., Persp.)	3
Mechanics for Architects	3
English I	3
French *or* Elective	3
Freehand Drawing	2
Total	18

⁂

1st Semester: *Second Year*

Major Group II	HOURS
a. Design	4
b. Materials of Construction	3
Theory of Architecture	1
Mechanics of Materials	3
History of Architecture I	2
French *or* Elective	3
Freehand Drawing	2
Total	18

2d Semester:

Major Group II	HOURS
a. Design	4
b. Materials of Construction	3
Theory of Architecture	1
Mechanics of Materials	3
History of Architecture	2
French *or* Elective	3
Freehand Drawing	2
Total	18

⁂

1st Semester: *Third Year*

Major Group III	HOURS
a. Design	4
b. Materials of Construction	3
Theory of Architecture	1
Graphic Statics (Trussed Roofs)	3
History of Architecture II	2
Sociology I	3
Freehand Drawing	2
Total	18

2d Semester

Major Group III	HOURS
a. Design	4
b. Materials of Construction	3
Theory of Architecture	1
Graphic Statics	3
History of Architecture II	2
Sociology I	3
Freehand Drawing	2
Total	18
Summer Work*	
Note: Total credit hours	180
* Summer work as assigned	4
Total required hours	184

⁂

1st Semester: *Fourth Year*

Major Group IV	HOURS
a. Design	6
b. Materials of Construction	1
Reinforced Concrete	3
History of Ornament	1
Sanitation	1
Economics I	3
Modeling	2
Freehand Drawing	1
Total	18

2d Semester: *Major Group IV*	hours
a. Design	6
b. Materials of Construction	1
Spec. and Contracts—Superintendence	2
History of Ornament	1
Illumination and Electrical Installation	2
Economics I	3
Modeling	2
Heating and Ventilation	1
Total	18

Summer Work as assigned

1st Semester: *Fifth Year*	hours
Architectural Practice	10
Office Administration	1
Business of Real Estate	3
History of Greek Civilization	3
Philosophy of Architecture	1
Inspection trip with no credit	0
Total	18

2d Semester:	hours
Architectural Practice and Thesis	13
Office Administration	1
Money and Banking	3
Nineteenth and Twentieth Century Architecture	1
Total	18

DESCRIPTION OF THE COURSES

MAJOR GROUP I (*a* and *b*).
Elements of Design and Theory of Architecture. First semester, three credit hours. Lectures and drawing.

A study and analysis of the elements of classic architecture. Lectures covering the explanation and form of columns, entablatures, walls, doorways, windows, vaults, etc., combined with graphic presentations, rendered in India-ink washes.

Second semester, *Elementary Design* (Analytique) 3 credit hours.

Composition of the elements of classic architecture with the application of lectures on theory and the introduction of basic structural forms. Minor problems of two weeks duration are followed by major problems covering a period of four to six weeks. Several nine-hour sketch exercises are included within the semester assignments.

Introduction to Construction. One hour credit each semester.

The structural properties, methods of manufacture and the artistic expression of the basic material groups are considered. Lectures, drawings, field trips.

⁂

MAJOR GROUP II (*a* and *b*), Prerequisite, Major Group I.
Intermediate Design (*Class B*). Four credit hours each semester.

A series of carefully arranged exercises in sequence, covering the planning of simple buildings. Application of the courses in theory and materials of construction with collaborative criticism by the instructors in design and construction. This work to be supplemented by research, lectures and group discussions. Several minor problems of two weeks duration, followed by major problems of four to six weeks duration. Several nine-hour sketch exercises are included within the semester assignment.

Materials of Construction. Three credit hours each semester.

Lectures on the physical properties, technical data and details of woods, concrete and concrete products, mortars, stones, brick, terra-cotta, gypsum, waterproofing, etc., including their application in detail to current design problems.

Construction design is studied in the making of dimensioned working drawings, together with the necessary calculations of current design projects. Field trips.

MAJOR GROUP III (*a* and *b*), Prerequisite, Major Group II.
Intermediate Design (*Class B*). Four credit hours each semester.

A continuation of Major Group II.

Materials of Construction. Three credit hours each semester.

Lectures on characteristics, technical data and uses of newly developed and synthetic materials. Structural systems of steel and concrete. Interior finishes and materials.

Application in detail to current problems. Field trips.

⁂

MAJOR GROUP IV (*a* and *b*), Prerequisite, Major Group III.
Advanced Design (*Class A*). Six credit hours each semester.

A continuation of design with the composition of larger plan subjects, involving both utilitarian and imaginative conception. Several collaborative exercises with painting and sculpture. Application of the courses in theory and construction. Criticism by instructors in construction combined with the critics in design. Major and minor problems. Several nine-hour sketch exercises are included within the semester assignment. Research, lectures, group discussions and visits to buildings.

Materials of Construction. One hour credit each semester.

Consideration of structural problems and details, and the calculation of typical and unusual structural forms found in current problems. Lectures, notes and drafting-room criticism.

⁂

ARCHITECTURAL PRACTICE. Ten credit hours, first semester.
Prerequisite, Major Group IV.

A transition between the school and practice. A complete correlation of all major subjects with a consideration of the individuality of each student. Realistic problems chosen by the student with faculty approval, solved and executed with respect to completeness in design, construction, finance, superintendence and office administration. This work is to be supplemented with a number of nine-hour sketch exercises. Special competition problems, such as the American Academy in Rome, Paris Prize, etc., may be substituted for regularly scheduled assignments. Field trips.

ARCHITECTURAL PRACTICE AND THESIS. Thirteen credit hours, second semester.

The work of the second semester is a continuation of that outlined for the first semester. The latter part will be devoted to the preparation of a thesis problem. The program will be developed and written by the student but approved by the faculty. This will call for a building of some importance, occupying a real site, and will be fully presented by plans, elevations, sections, detail drawings, and specifications of construction and finish.

The layout of all mechanical installations will be included. As a further evidence of the full understanding of the problem, the student will be required to defend his thesis by an oral examination before all members of the faculty.

Conferences, discussions, field trips.

⁂

Theory of Architecture. One credit hour each semester.
Prerequisite, Major Group I.

The primary principles of plan composition and interrelation of their various parts. Program analysis. Exercises in meeting program requirements. Lectures, notes and drawings.

During the second semester consideration will be given to the plan and its relation to space. Composition and elements of façade. Sketch exercises and the correlation of the course in its entirety to the work in design. Lectures, notes.

Theory of Architecture. One credit hour each semester.
Prerequisite, Major Group II, Intermediate Design.

A study of composition and structure and their relation to types of buildings. Sociology in architecture with respect to contemporary problems. Sketch exercises and correlation of the course in its entirety to the work in design. Lectures, notes.

Second Semester

Grand composition and group planning. Study of imaginative and contemporary projects, supplemented by graphic exercises. Lectures, notes.

Freehand Drawing, Elementary. Two credit hours each semester.

Pencil and charcoal drawing from simple architectural casts and models. Concours.

Freehand Drawing, Antique and Life. Two credit hours each semester.
Prerequisite, the above.
Drawing from the antique. Life drawing, Concours.

Freehand Drawing. Water-color. Two credit hours each semester.
Prerequisite, the above.
Outdoor sketches and creative studies. Summer work.

Freehand Drawing. Pencil. Sketches and Creative studies. One credit hour, first semester.
Prerequisite, Freehand Drawing, Elementary and Antique and Life. Summer work.

Modeling. Plastic and Architectural. Two credit hours each semester.
Prerequisite, Freehand Drawing, Elementary and Pencil.
Technique applied to modeling architectural forms. Various methods of constructing models of buildings.

◆

Architectural Graphics. Descriptive Geometry. Three credit hours, first semester.
The principles and theory of all projection drawing, so important to the architectural draftsman, are fully presented by lectures, conferences, drawings and models.

Architectural Graphics. Shades and Shadows, Perspective.
Prerequisite, the above. Three credit hours, second semester.
The first half of the semester is devoted to the study of methods for the rapid and accurate casting of shades and shadows or architectural forms.
The second part of the semester is given to the scientific and practical presentation of the principles of linear perspective, which includes various methods and short cuts. Reflections and shades and shadows in perspective are considered.

◆

Mechanics of Materials. Three credit hours, each semester.
Prerequisite, Mechanics for Architects.
A course showing the application of mathematics and the principles of mechanics in the fundamentals of construction: forces, stresses, resistance of materials, design of beams, girders, columns, etc. The student is required to make graphical and analytical solutions of various problems such as encountered in practice. Text, lectures, recitations.

Second Semester: Advanced problems. Problems applying to theory, design and laboratory tests on steel, cast iron, wood, concrete mixtures, reinforced concrete beams and columns, brick, tile, stone, etc. Lectures, notes, testing laboratory.

Graphic Statics. Trussed Roofs, Arches, etc. Three credit hours each semester.
Prerequisite, the above.
The development and application of the principles of graphic statics to various forms of architectural construction. Beams, trusses, sway bracing, retaining walls, piers, arches, etc., are considered from both the structural and the artistic viewpoint. Practical problems selected from current projects and other sources are solved. Lectures and drafting periods.

Reinforced Concrete. Three credit hours, first semester.
Prerequisite, Mechanics for Architects.
Principles of reinforced concrete. Theory of beams, slabs and columns and application to ordinary structures. Text, lectures, problems.

◆

History of Architecture. Two credit hours each semester.
First Semester: A study of the development of Egyptian, Assyrian, Greek, Roman and Byzantine architecture.

Second Semester: Romanesque and Gothic occupies the entire semester. Lectures (illustrated), notes and research drawings.

History of Architecture. Two credit hours each semester.
Prerequisite, the above.
First Semester: Architecture of the Renaissance and to the beginning of the nineteenth century in Europe.

Second Semester: Nineteenth-century architecture in Europe. Development of Colonial architecture in the United States. Lectures (illustrated), research and drawings.

Nineteenth- and Twentieth-Century Architecture. One credit hour, second semester.
Prerequisite, the above.
A seminar course dealing with the development of American architecture in the nineteenth and twentieth centuries, with a review and discussion of the work of contemporary architects.
Discussion, research.

History of Greek Civilization. Three credit hours, first semester.
Prerequisite, Second-year History of Architecture.
See Greek Archæology 130 (L.A.). This course is to be modified and supplemented for architects.
Lectures (illustrated), research and notebook. Conferences.

History of Ornament. One credit hour each semester.
Prerequisite, Second-year and Third-year History of Architecture.
Classification of man's impulses that inspired ornament, and the forms and processes resulting in basic types. The evolution of these motifs from the primitive to the most modern forms. The purpose of this course is to design and use ornament in an artistic and appropriate manner. Lectures, research, notes, drawings.

Sanitation. One credit hour first semester.
Principles of sanitation in general. Sanitation of buildings. Arrangements of sanitary plumbing and drainage systems. Plans and specifications. Text, lectures, drawings, field trips.

Heating and Ventilation. One credit hour, second semester.
Principles of heating and ventilation and their application to hot air, steam and hot water installations. Air conditioning and modern appliances. Lectures, drawings, field trips.

Illumination and Electrical Installations. Two credit hours, second semester.
Methods of control, light sources, reflection and computation of illumination, and general design illustrated by typical problems. Fundamental electricity, typical apparatus and application in design. Control of electric distribution systems for buildings. Lectures, field trips.

Specifications and Contracts, Superintendence. Two credit hours, second semester.
Specifications and specification writing. Contracts and contract law are duly considered. Specifications for a building are required.
The second half of the semester is devoted to superintendence methods, and visits to buildings under construction. Lectures, conferences, field trips and reports.

Office Administration. One credit hour each semester.
Prerequisite, the above.
Presentation and discussion of methods of office administration and practices. Professional ethics, competitions, preliminary costs, etc. Special lectures by practicing architects on phases of this subject will be given at intervals. Lectures and notes.

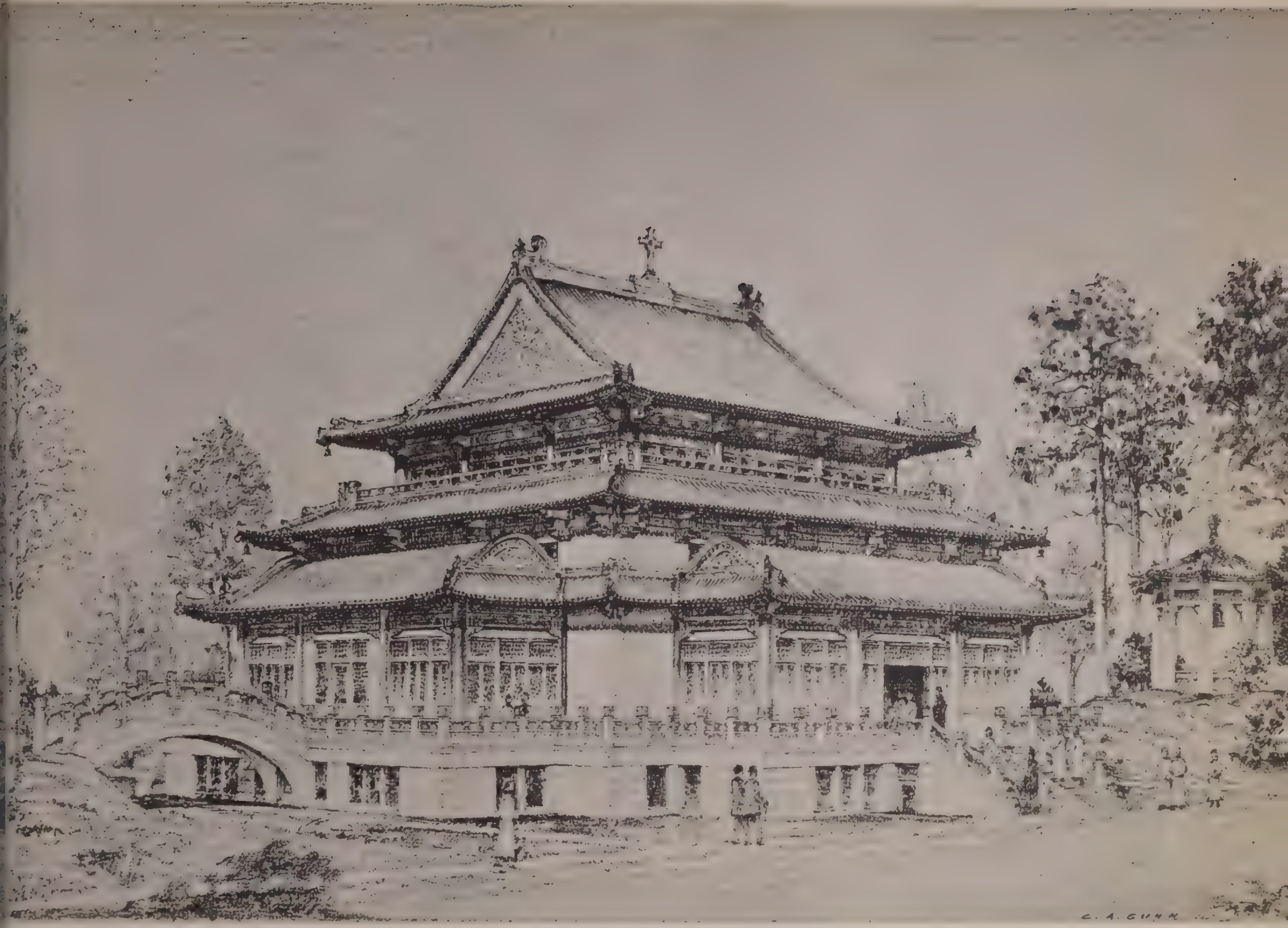
Philosophy of Architecture. One credit hour, first semester.
A seminar course covering the æsthetic, sociological and economic relationships to architecture.
Discussions and research.

Summer Work. Four credit hours.
Students are advised to spend each summer vacation during the course in offices of reputable architects, or in part on construction projects of some importance.
Candidates for graduation must present a certification from employers that they have had office or field experience equivalent to summer vacations (sixteen weeks). Approved research along architectural lines will be accepted as part of the above requirement.

Inspection Trip. No credit.
Several days' faculty-conducted inspection trip to a metropolitan center required of each student registered in Architectural Practice and Thesis.

◆

Courses of Instruction in other Colleges of the University.
Several technical courses, such as Mathematics, Mechanics of Materials, Reinforced Concrete, Heating and Ventilation, are taught in the College of Engineering.
Non-Technical subjects, such as English, French, Sociology, Economics, History and certain electives, are taught in the College of Liberal Arts.
Real Estate and Finance are given in the College of Business Administration.

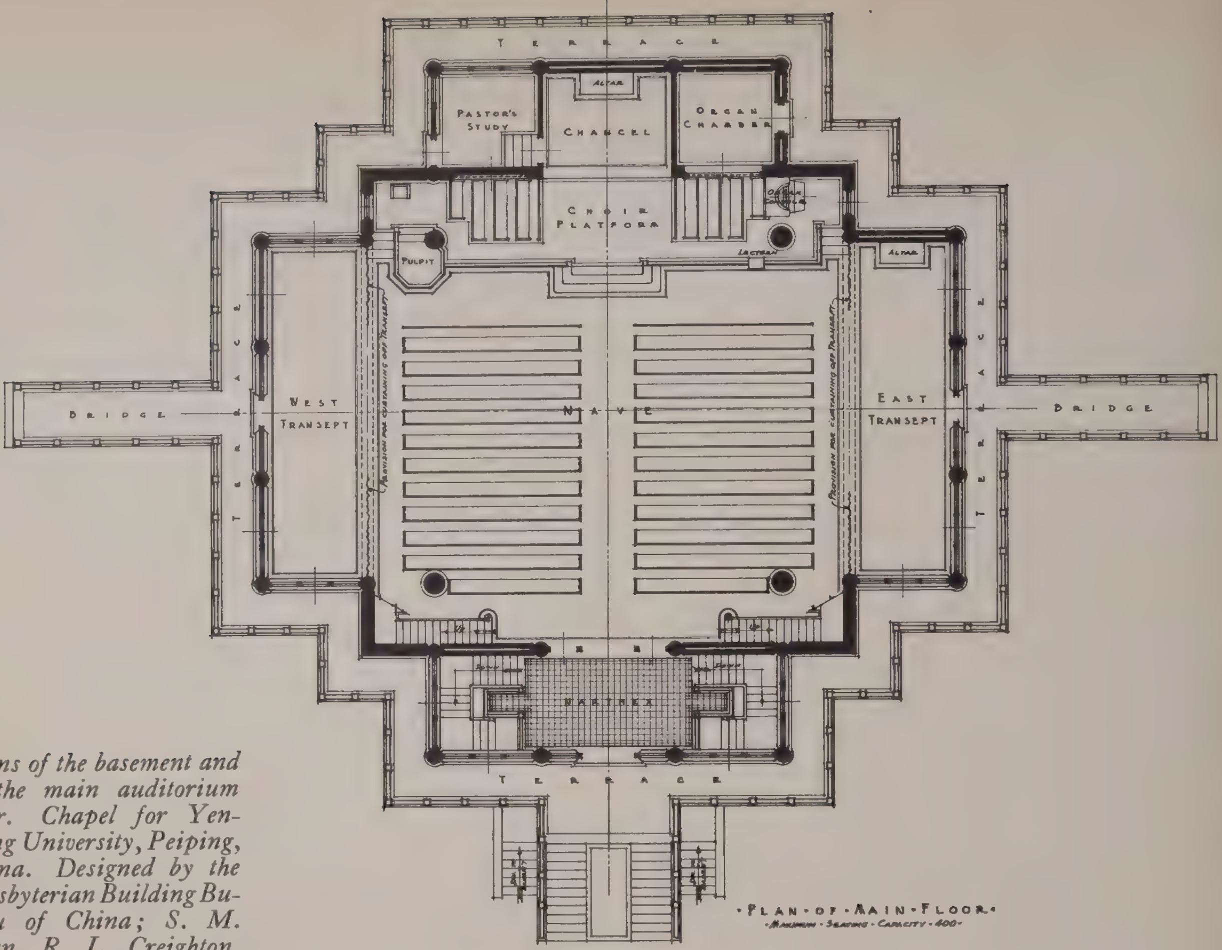


Yenching University at Peiping, China, is about to erect a chapel of which we show a preliminary perspective above and, on the following pages, some of the plans, a section, and a sheet of detail drawings.

As Christian churches in this style are rare, and moreover, as Western influences in the East usually seek to impose their own ideas of art and architecture upon Eastern peoples, this example is a refreshing exception to the general rule.

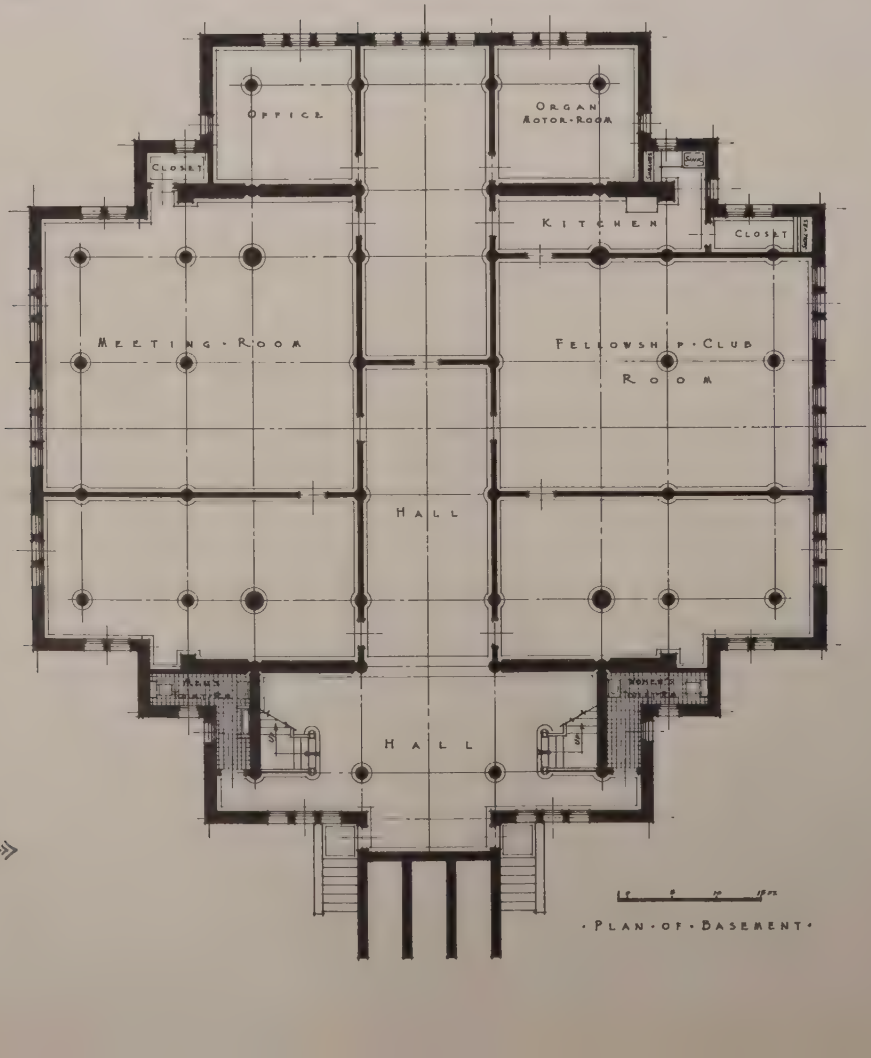
Designed by the Presbyterian Building Bureau of China; S. M. Dean, R. L. Creighton, and C. A. Gunn, associates

A CHAPEL FOR YENCHING UNIVERSITY PEIPING, CHINA

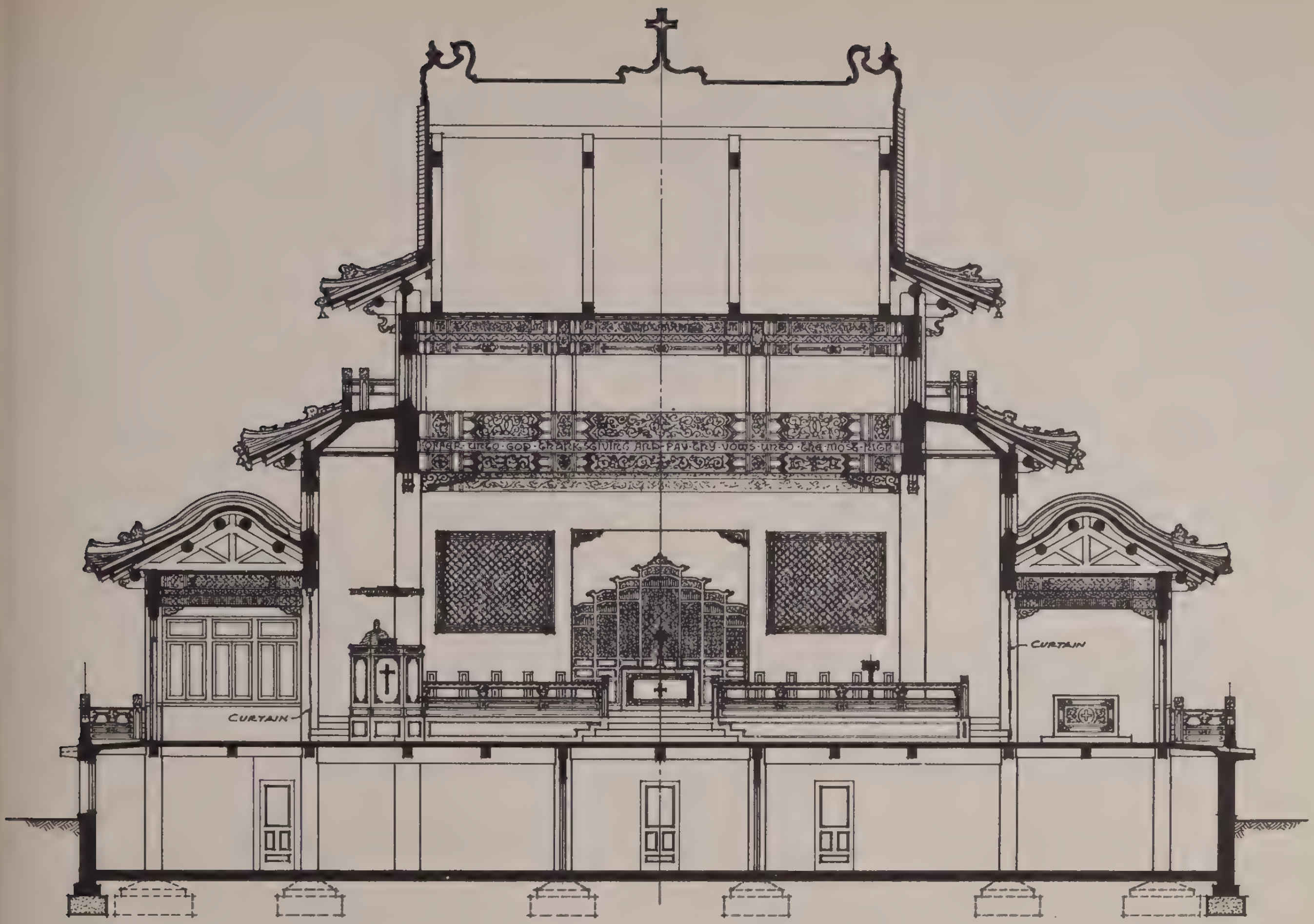


•PLAN•OF•MAIN•FLOOR•
•MAXIMUM•SEATING•CAPACITY•400•

Plans of the basement and of the main auditorium floor. Chapel for Yenching University, Peiping, China. Designed by the Presbyterian Building Bureau of China; S. M. Dean, R. L. Creighton, and C. A. Gunn, associates



•PLAN•OF•BASEMENT•


OFFER · UNTO · GOD · THANKSGIVING AND · PAY · THY · VOWS · UNTO · THE · MOST · HIGH
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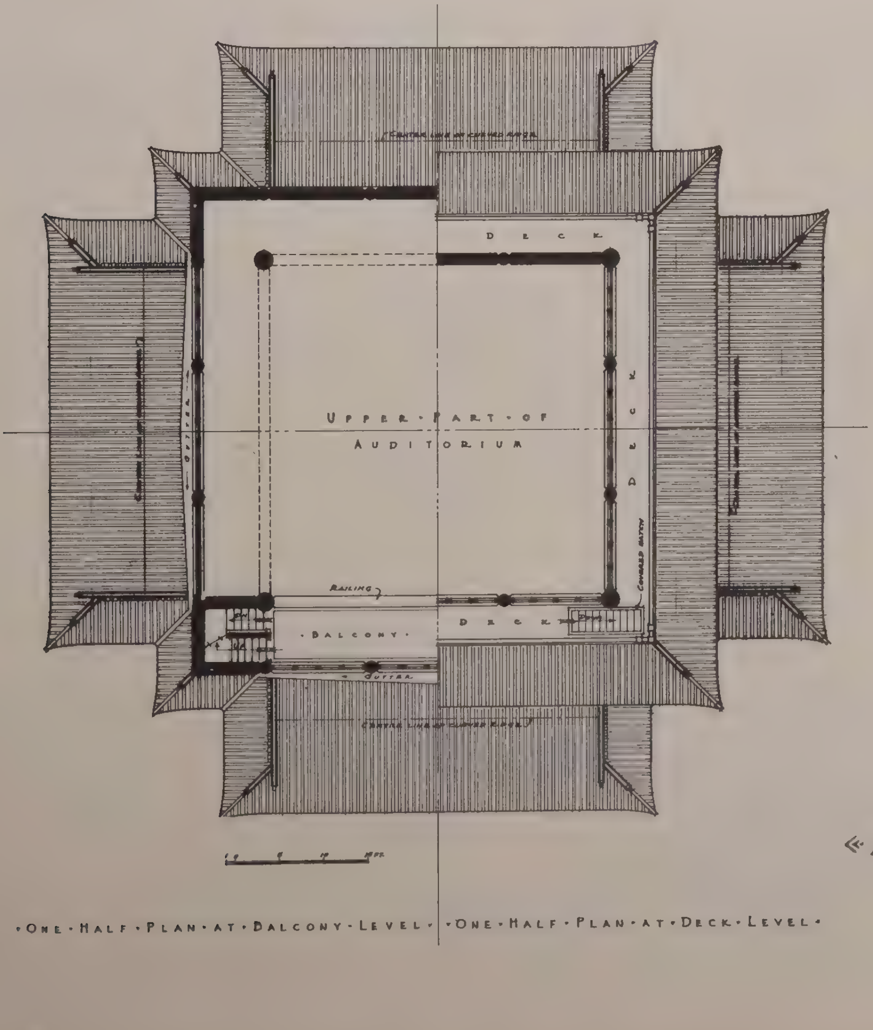
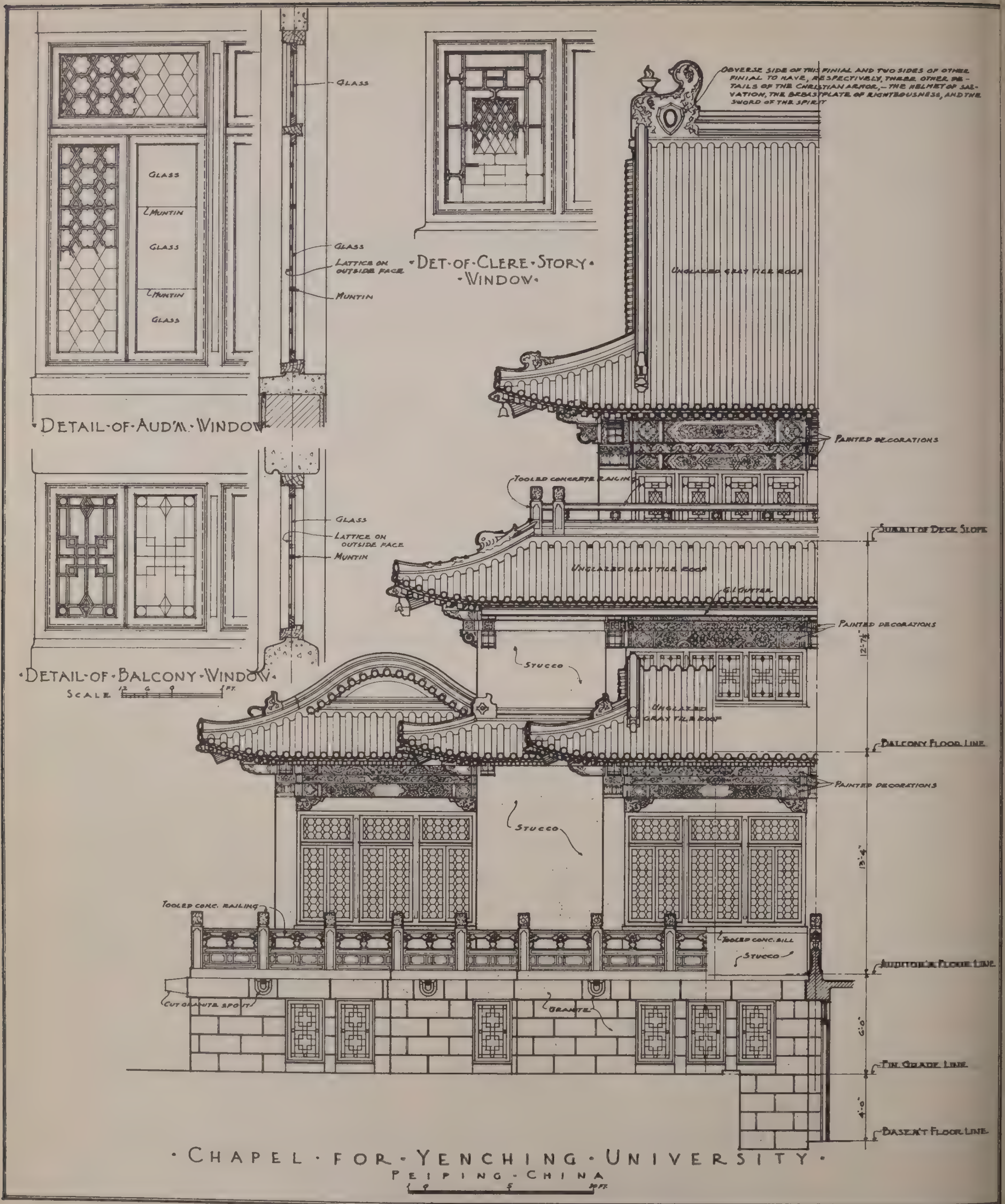

CENTRE LINE OF CURVED RIDGE
DECK
UPPER · PART · OF AUDITORIUM
GUTTER
DECK
COVERED GUTTER
RAILING
BALCONY
DECK
GUTTER
CENTRE LINE OF CURVED RIDGE
· ONE · HALF · PLAN · AT · BALCONY · LEVEL ·
· ONE · HALF · PLAN · AT · DECK · LEVEL ·

Above, a transverse section; to the left, plan of the balcony and deck levels. Chapel for Yenching University, Peiping, China. Designed by the Presbyterian Building Bureau of China; S. M. Dean, R. L. Creighton, and C. A. Gunn, associates



Miscellaneous details. Chapel for Yenching University, Peiping, China. Designed by the Presbyterian Building Bureau of China; S. M. Dean, R. L. Creighton, and C. A. Gunn, associates

RECENT DEVELOPMENTS *in* DWELLING CONSTRUCTION

TECHNICAL REPORT NO. 1, AS PREPARED BY THE TECHNICAL DIVISION, FEDERAL HOUSING ADMINISTRATION

The building industry, particularly in the realm of dwelling construction, is a seething cauldron of experiment and development. What is to come out of the pot, to change our ancient methods, few men have the temerity to predict. Meanwhile, in spite of the old saw— "a watched pot never boils"—architects will want to keep a wary eye out for what may emerge. The Technical Division, FHA, herewith presents a general survey. In the issues immediately to follow we purpose examining, without prejudice and without protagonism, some of the individual systems now aborning.—EDITOR.

THE subject of prefabricated houses is one of the foremost in popular discussion today. Innumerable articles have appeared in the periodicals and newspapers and questions about prefabricated construction have been pouring into this Administration. It would appear that an impression is being made in the public mind that the problem of building better houses at a lower cost, and with great ease and rapidity, has been solved or is about to be solved by the prefabricated house and that the mass production of such houses is a new industry with all the possibilities of, for example, the automobile industry.

It is true that, during the period of inactivity which for the past four years has encompassed the construction industry, the industry itself has not been asleep. The period has been characterized by a wide interest in the technical problems arising from the design and construction of houses. This interest has taken its impetus from a recognition of the facts that new dwellings have in the past been built only for a very limited class, and that under existing methods of construction and of industrial organization it is not likely that this limited market can be greatly extended.

Recognizing that a marked lowering of dwelling costs or a radical change in accepted materials and design would have an influence upon the level of value of existing property and upon the rate of obsolescence of existing dwellings, the Technical Division of the Federal Housing Administration has undertaken to accumulate information concerning new developments in dwelling construction. It has sent a questionnaire to all known experimenters and manufacturers of new housing. It has gone over a large amount of material brought forth by this questionnaire and obtained from other sources, and it has, where possible, conducted personal inspections. In its work it has received assistance from the National Bureau of Standards and the Bureau of Foreign and Domestic Commerce, both of the Department of Commerce; the Forest Products Laboratory, of the Department of Agriculture; the Tennessee Valley Authority; Albert Farwell Bemis; the Pierce Foundation; the Portland Cement Association, and others who have been making studies along these lines, which assistance it wishes gratefully to acknowledge.

This report presents the following:

1. The approach which is being made to the problem of better construction at lowered costs, and an evaluation of the work which has been done, together with tentative conclusions as to its probable effect on the dwelling market.
2. Brief descriptions of the different methods and materials of construction which are being tried out, together with lists of the individuals and concerns who have been engaged in such work. This includes some methods developed and used in Europe.

While every effort has been made to make this report comprehensive, the widespread experimentation now taking place, together with the secrecy with which it is frequently characterized, makes any assurances on this score impossible. The same reservations must be made for any conclusions drawn from the data, since there is no way to gauge either the rate at which developments may proceed or the degree of popular acceptance that may be gained for them. Although the opinions stated are based upon the best engineering judgment that may be applied to the situation as it stands at present, no permanent quality can be claimed for them. Subsequent reports may present opinions of a contrary nature.

The New Approach

For centuries houses have been built of wood, brick, stone, mortar, and plaster. The wood, brick, and stone have been brought to the site of the building operation in comparatively small sizes and there cut and trimmed by hand to fit the requirements of the particular building and then put together piece by piece—studding, beams, sheathing, siding, bricks, lath, and plaster—usually by hand. The newer mechanical work has followed a similar procedure.

This has necessitated the employment at the site of a large amount of hand labor, much of it skilled and highly specialized. For the specialist, the amount of work on a single job is limited. To avoid having idle men on the pay roll, the employment period has been the hour or day, men being laid off as soon as their services are not needed. This has resulted in a large amount of idle and unpaid-for time and, to compensate for this, an hourly or daily wage high in proportion to that paid in other lines of work.

The attack on the problem of building better and more cheaply is being made on four fronts: purchasing materials and equipment in larger quantities from fewer sources; factory fabrication of larger units and units combining more than one purpose so as to lessen the work of assembly and erection on the job site; the use of materials supposedly better suited to their function and to factory fabrication; and employment of labor by the week instead of by the hour with a lower hourly wage in return for steadier employment. It is with the development of factory fabrication and with the materials and methods of assembly used in such fabrication that this report is concerned.

Factory Fabrication or Ready-to-Erect Construction

To take advantage of the spread between wholesale and retail prices, a new middleman is appearing in the field. This new middleman is really a manufacturer of houses. He employs architects and engineers to design his houses, to study available materials and work out new methods of assembling them. He contracts in advance, usually directly, with manufacturers for his anticipated material and equipment requirements, based on his decisions to use certain materials and equipment in certain ways to produce a definite product. He then offers for sale, not his services as do architects and contractors, not a piece of property consisting of house and land as do operative builders, but a house more or less complete and with varying degrees of standardization, which in a sense is a trade-marked product, and which is ready to erect on land owned by the purchaser. Erection may be handled by the manufacturer through local representatives, perhaps using their own erection crews, with local subcontractors for foundations and mechanical work, or the purchaser may make his own arrangements for erection.

Only a few concerns have adopted the practice of marketing a complete housing assembly. Many new types of structural enclosures and new methods of building them, however, have been prepared for commercial production.

The phrase "ready-to-erect" is used to define the practice of ordering by plan a structural enclosure or a complete house, with delivery made by one concern of all parts ready to fit into their proper places without the usual cutting and trimming. In this report, ready-to-erect construction has been considered as either "Complete Housing Assemblies" which include heating, plumbing, and electrical piping and equipment, or "Structural Enclosures" in which the mechanical equipment and materials, and sometimes the interior finish, is supplied by the purchaser.

The factory-fabricated house—or as it is often called, the prefabricated house—is a misnomer. Our transportation facilities do not provide for the economical delivery, from factory to site, of a completed house.

In the usually accepted meaning of the words, the structure of the prefabricated house is made in the factory in large panels, which are assembled and fastened into place on the site without the usual hand work of cutting, fitting, and fastening together a number of pieces of wood, laying brick on brick, and mixing and spreading mortar and plaster.

The purposes of prefabrication are to transfer to the factory as much as possible of the work of putting together a house, to reduce the time needed for its erection, and so through the greater efficiencies of mass factory production to utilize power and machines, concentrated planning and purchasing, and the reduction of waste, to effect economies which will reduce the cost of construction. To what extent this aim has been attained and what may be expected from the development of this new technique in building construction, it is the purpose of this article to examine.

All building in this country today, with the exception of adobe or rammed earth structures, is done with factory fabricated units. Some of these units are as small as a nail or a grain of cement. The new technique calls for panels as large as can be conveniently and economically transported and handled and as will permit the advantages of standardization and interchangeability. These have reached the size of an entire side of a house but are usually of a size which is more easily handled.

Prospects for Prefabrication

A study of the many new methods of construction and assembly, and of the materials used in them, leads the Technical Division to the following conclusions:

The present is definitely a period of experiment. Urged on by the desire to be ready to meet the anticipated demand for new homes, manufacturers are almost daily putting out new forms of materials and new methods of using them. These are still in the exploratory stage. Experience records in their use are so limited that it is too early to tell which have definite merit and will result in the hoped-for better construction and lowered costs.

The newer techniques in building construction have not yet resulted in lowered costs, and an immediate lowering of cost is not to be anticipated. Comparative cost studies made between quoted prices for ready-to-erect houses and houses built in the usual way, equivalent in size, plan, durability, fire resistivity, insulation, and quality of finish and equipment, show no cases where the ready-to-erect construction has resulted in a saving in total cost. In almost every case such construction has been more costly and, compared with wood frame construction, it has usually been appreciably more expensive.

The higher cost limits sales to those few who are attracted to this type of construction, and who do not know or do not mind that the cost is higher.

There are many obstacles in the way of obtaining the mass production on which most of these methods base their hopes for lowered costs. The immediate demand is small and it is difficult to gauge the coming market. This limits volume of manufacture and the planning of production is almost impossible.

In this country the public has been slow to favor the modern International style of architecture so largely used in the newer construction. The materials and large panels of this construction lend themselves readily to this style of architecture and designers have favored it, believing that the public will accept it. Stimulated by the example of the recent Chicago "Century of Progress," people have become interested in modern design and it seems reasonable to believe that it will gradually obtain the widespread favor which it has obtained in Europe. The complaint against standardization is unfounded—as evidenced by examples of skillful treatment—and fairly pointless when the dreary monotony of our low-priced subdivisions is considered. Still this feeling tends to defer widespread public acceptance. The question of modern architectural design has been treated at greater length in Technical Report No. 2, entitled "Modern Design."

Since, in its ultimate development, the assembly of all the parts of the factory-fabricated house above the foundations could be handled by a few skilled mechanics, it is evident that craft distinctions now existing in the building trades would be broken down and that many of the men now engaged in building construction would have to look to the factories for employment. The labor organizations in the building trades are fighting hard to prevent the introduction of methods which will reduce the amount of job labor.

This attitude is in many ways retarding the introduction of factory-fabricated units.

Building in urban localities has varying and often rigid building codes. In many places building codes and building officials are slow to recognize new materials and methods of construction. The introduction of any revolutionary development in building construction must await considerable code revision.

Thus faced with a fourfold handicap of high cost, unfamiliar appearance, labor opposition, and unfavorable building codes, the widespread adoption of considerable changes in our methods of constructing dwellings is not to be immediately anticipated. Such obstacles, however, may not be insurmountable, and the apparently ample capital available for experiment and the increasing ingenuity being displayed by inventors leave little doubt that the effort to overcome them will be vigorously pursued.

The handicap of cost is the most critical. If a method were devised which would result in the construction of houses at appreciably lower cost than at present, public acceptance would doubtless be forthcoming in spite of the tendency to cling to the familiar, and the resistance due to craft practice and building codes would gradually be broken down. While, as has been said, this prospect does not seem to be immediate, the advantages of rapid erection, flexibility, convenience, comfort, and low maintenance which several of the new systems seem to offer, will probably, in the meantime, create a slowly expanding market.

In considering the possible reductions in costs which might be obtained through the development of ready-to-erect construction, the following figures showing the approximate distribution of costs will be helpful. The selling price of the average new home is made up of the costs of land, its improvements, and the utilities which serve the building, the construction cost of the building, financing and selling expenses, and profits. Of this total, the construction cost of the building is about 70 per cent, divided into 50 per cent for the structure and its finishes and 20 per cent for equipment and accessories. Only about 25 per cent of the total selling price goes to direct labor on the job.

The reduction in cost to be anticipated from the use of factory-fabricated methods must largely be found in savings in the labor of erecting the structural enclosure. This saving, together with additional economies, which may be made through efficient and concentrated management and purchase of materials, may reduce the total selling price in the neighborhood of 15 per cent. Such savings would, however, at the present stage of development, seem to be offset by unfamiliarity of labor and management with this type of construction, the higher cost of the materials used, the tendency to increase equipment and accessories, and the distribution of overhead expenses over a very limited production.

In the present inconclusive stage of development, only a few months' time may make a considerable difference in the prospect. The situation is, therefore, one which merits close and continued attention.

Materials and Methods of Construction

Steel and Other Metals

Light structural shapes, for use in dwellings and other low buildings where great strength is not required, are being developed and put on the market by the manufacturers of structural steel.

Built-up framing members such as bar joists have been in use for some time for floor construction. Similar members have been brought out for walls and roof rafters.

Strip-steel framing members of around 12 gauge to 16 gauge are obtaining increasing use. These are light in weight, easy to handle, and can sometimes be nailed into with a special nail designed for this purpose.

Strip-steel frames used in wall construction are made by welding together in the shop, framing and bracing members to form rectangular frames which, when bolted together on the job, act as wall framing.

Framing of tubular steel members, which has been tried in Europe, is beginning to receive some attention in this country. This type of construction has been in common use here for scaffolding.

In frameless steel construction, panels are shop-fabricated of a series of cells, or of large sheets with the vertical edges bent inwardly, usually called pans.

Cellular panels have been used for some time for sub-floors usually laid over structural steel framing in large buildings. These have now been adapted for bearing wall construction and for floors, so that no framing is required. Panels of sizes to fit any plans may be made by welding the cells together in the shop.

The pans—or plates with the edges bent inwardly—are usually so made and fastened together as to form structural units for bearing walls. They are sometimes used for sloping roofs or as forms for reinforced concrete floors.

In frameless steel construction, the steel is sometimes used as the exterior or interior surface, finished except for painting; or any desired material may be used over the steel, such as brick, stucco or plaster on lath, etc.

Sheets of various metals, such as steel, copper, and aluminum, are used for exterior and interior surfaces. These are secured to steel or wood framing.

Steel must be painted to protect it against corrosion. Protection as well as decoration is sometimes obtained by an enamel finish baked on to steel plates.

Metal walls and roofs should be backed with insulating materials to retard heat conductance.

A large number of houses have been built in Europe with steel pans and with steel frames and sheets. The sheets and pans have usually been of heavier gauges than used here.

A good many houses have been built using structural and strip-steel frames. Only those which depart in some way from ordinary framing methods have been listed here.

* * *

Aluminaire House, Syosset, Long Island. Exterior walls of ribbed aluminum sheets secured to steel frame. One house built at Syosset, Long Island, N. Y. Experimental.

American Houses, 480 Lexington

Avenue, New York City. Steel frame of specially shaped studs and trussed floor joists. Exterior walls between studs are panels of insulating material covered both sides with asbestos cement. Sub-floors and partitions are of gypsum plank. This concern markets and erects a complete housing assembly and has built over forty houses.

Bemis Industries, Inc., 40 Central Street, Boston, Mass. Experiments with steel construction of various kinds.

Berger Manufacturing Company, Division of Republic Steel Corp., Canton, Ohio. Rectangular strip-steel wall frame units of 16-gauge channels and bracing welded together, and strip-steel channel floor joists. Two houses built near Washington, D. C.

Columbian Steel Tank Company, 1401 West 12th Street, Kansas City, Mo. Structural enclosure with 18-gauge galvanized steel pan walls, strip-steel frames for partitions, and floors and roof of ordinary wood frame construction.

Copper Houses, Inc., 10 East 40th Street, New York City. Structural steel frame. Exterior walls and roof covered with copper sheets. Two houses built near Washington, D. C.

Corkanstele, 270 Madison Avenue, New York City. Structural enclosure with a structural steel frame covered on the exterior with an insulating sheathing of cork slabs; subflooring of a precast slab of concrete with a cork aggregate and partitions of the same material. A number of such houses have been built.

General Houses, Inc., 220 South State Street, Chicago, Ill. Structural enclosure with 14-gauge steel pan walls, carrying load and acting as exterior finish. Steel floor and roof joists. Complete housing assembly furnished with interior finishes. About a dozen houses built. Also experimenting with a house having a steel frame of specially shaped steel studs and 16-gauge steel roof joists, with wall and roof panels composed of two sheets of plywood glued to a light wood frame with insulation contained between plywood sheets. This concern markets and erects a complete housing assembly.

Housing Company, 40 Central Street, Boston, Mass. (See Bemis Industries, Inc.)

Houses, Inc., 480 Lexington Avenue, New York City. A holding and financing organization to promote the use of General Electric equipment. Now behind American Houses, Inc.

Insulated Steel Construction Co., Crawford Street, Middletown, Ohio. Structural enclosure of panels made of 19-gauge rectangular steel cells. Steel may or may not be left exposed as wall surface. Several houses built by this method.

Edwin M. Lurie, Metal Lath Manufacturers Assoc., 208 South LaSalle Street, Chicago, Ill. Structural enclosure having a structural steel frame; inner and outer wall surfaces formed with furring channels and metal lath to receive stucco and plaster; metal lath and plaster ceilings, ribbed lath and concrete subfloors.

Martin-Parry Corporation, York, Pa. Structural frame of strip-steel members which slide together and are secured by clips, eliminating bolts. Interior finish secured by special mouldings.

McKay Engineering Company, Builders Exchange Building, Cleveland, Ohio. A standard structural steel frame enclosed within double walls of any standard materials. Attached by special clips.

National Houses, Inc., Grand Central Palace, New York City. Structural enclosure of 14-gauge steel pan walls; steel frame partitions, steel joists for floors and trusses for roof.

Palmer Steel Buildings, Inc., Los Angeles, Calif. Sales and engineering service for structural enclosure of Robertson Keystone cellular steel panels. One or two such houses built in Los Angeles.

Reynolds Corporation, 19 Rector Street, New York City. Framing members of galvanized strip steel in hollow shapes filled with a cement composition to hold nails. "Ecod Fabric"—a wire lath combined with paper which is sometimes backed with aluminum foil, is also put out by this company as a backing for stucco, brick veneer, and plaster, and recommended by them for use with this frame. They propose to furnish specifications for a complete housing assembly and to arrange for mortgage money.

H. H. Robertson Company, Grant Building, Pittsburgh, Pa. Panels of keystone-shaped steel cells which can be used for wall and floor construction. In use for sub-flooring for some years.

Soulé Steel Company, 1750 Army Street, San Francisco, Calif. Rectangular steel wall frame units of pressed steel studs welded to transverse steel members. Trussed steel floor joists.

Steel Housing Corporation, 134 North LaSalle Street, Chicago, Ill. Structural enclosure with walls of special strip-steel shapes holding steel plates in three layers with air spaces between; partitions similar with two plates; floors of "I" beams, plates and pans. Panel heating by warm air circulating in hollow walls and floor construction, wall and ceiling plates acting as radiators.

Steelasco System (R. F. Berryman), Orlando, Fla. 28-gauge steel sheets for walls, sub-floors, and roof, on wood framing; sheets are covered with bituminous protective coating.

Steelox Company, 59 West Austin Avenue, Chicago, Ill. Walls and sloping roof of 20-gauge galvanized iron interlocking pans. Material for complete housing assembly is furnished. One house at Middletown, Ohio.

Stran-Steel Corporation, 6100 McGraw Avenue, Detroit, Mich. Strip-steel framing members, usually channels, with webs crimped and spaced slightly apart to receive nails.

Structo, Inc., 1015 East 63d Street, Kansas City, Mo. Structural enclosure of 14-gauge steel pan walls; steel frame partitions, steel floor joists and roof trusses.

Walter H. Stulen, Carnegie Institute of Technology, Pittsburgh, Pa. Structural frame of specially cut strip-steel units welded to light steel channels. Experimental.

C. L. Van Ness, Akron, Ohio. Tubular steel wall columns and 14-gauge strip-steel channel floor joists. Inner and outer walls, floors, and ceilings of 20-gauge steel pans. Hollow wall and floor construction used for air ducts and as radiating surface. Experimental.

Variplan, S. S. & G. H. Godley, 307 East Fourth Street, Cincinnati, Ohio. A complete housing assembly using a steel frame and steel sheets for exterior finish.

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This Report continues next month with a consideration of detailed efforts in houses of Wood, Concrete, Gypsum and Other Plastics, Reinforced Brick, with a brief glance at Foreign Practice.—EDITOR.

The Editor's Diary

Monday, September 2.—Most of the larger architectural offices have their own systems of symbols for the indication of various materials and other elements on working drawings. Possibly no two of them, however, have the same system. What then are the instructors in the architectural schools to teach the students in mechanical drawing classes? If this is something of a problem in the architectural schools, it is perhaps more in machine design, and the engineering courses. However, Dean Franklin DeR. Furman, of Stevens Institute of Technology, chairman of a committee appointed by the American Standards Association, has endeavored to compile a graphical dictionary of drawings. There are sub-committees on Specifications for Paper and Cloth, Methods of Indicating Dimensions, Lettering, Drawing Layout, Line Work, and Graphical Symbols, so perhaps we shall soon all be working under a uniform system of graphical representation.

Wednesday, September 4.—Artificial lighting must have made tremendous strides in widespread acceptance during the last generation. The citizen of the United States uses slightly more than five lamp bulbs per year, with Denmark the next most enlightened nation, using about 1.75 lamp bulbs per person per year. Most of the European countries use about 1.5 lamps per person.

Thursday, September 5. — Lunched with Albert C. Schweizer, who is helping to produce architects at New York University. We were discussing some new evidence of the fact that architecture is the mother of all the arts. Students who intend to follow some specialized branch of industrial design are coming, Professor Schweizer tells me, in increasing numbers to take the architectural course. He mentioned two instances of photographers who intend to specialize in architectural photography, and who are acquiring, as a foundation, a training in architecture. After all, when you come to think of it, the architectural student is the only one who is taught the fundamental bases of design. One might go to an industrial or vocational school, and learn something about textiles, metal working, and what not, but without acquiring the broad foundation that forms the basis of architecture. In a word, the architectural schools ought to be turning out not only the men who will practice architecture, but the industrial designers in all branches.

Saturday, September 7.—There is a new building for the Kress stores going up on Fifth Avenue on the site of the old Wendell mansion. Curiously enough, the layman seems to be getting more architecture-conscious, for a number of observing men have asked me why it is that there are so few windows in the building. Obviously, we are rapidly moving into a period when the stores will place less and less dependence upon daylight, and more upon artificial lighting. With the rapid improvement made recently in combining the blue-green mercury vapor light with the yellowish tungsten-filament light, an approximation of daylight seems easily available at low cost. Of course, it is far more dependable than daylight, particularly in portions of the store more distant from the windows, and moreover does not vary with the hours of the day or weather conditions. In fact, with the aid of light-regulating equipment, this artificial light may be increased or decreased as the daylight fades or grows, so as to preserve a level degree of illumination at all times.

Monday, September 9.—Even if we are not building a great deal of low-cost housing these days, we are learning some pertinent facts. Some of these appear in a recent report of the New York State Housing Board. The Board has had under its supervision during the past year eleven low-cost housing projects on which cost figures have been carefully kept. These show that maintenance costs alone average $3.70 per room per month—the cost of water, fuel, electricity, janitor service, and other necessary operating expenses aside from interest and taxes.

On an average construction cost of, say, $1200 per room, interest and amortization together at 5 per cent would add another $5 to our fixed charges, and there is still to be reckoned in the cost of land and taxes. All of which makes the goal of low-cost housing for the lower income groups seem very far away.

Wednesday, September 11.—Air conditioning is coming along in the world, now having been made the subject of a university course at Columbia. It is beginning very modestly with two evening sessions a week in the Department of Architecture. John Everetts, Jr., will direct the study of air mixtures, refrigerating equipment, and other elements of the new science.

Friday, September 13.—After months of talk, the Mayor of New York City has put upon a new basis the distribution of architectural commissions for municipal works. It seems to be the dawn of a new day. Heretofore, architectural commissions for schools and other public buildings have been distributed with at least a suggestion of political favoritism. There have been those who have advocated the adoption of the principle that all public works should be the subject of competition. There are others who feel no less strongly that competition is a slow and wasteful method of selection. What the Mayor of New York has done is to ask the various professional societies each to collaborate in a jury of three outstanding architects who themselves would be *hors concours*, and who would select an approved list of fifty outstanding architects who, by experience and ability, are best qualified to design and build the city's architectural work. The jury is not to bestow individual commissions—that will be done by the various heads of departments involved, with the Mayor's approval, limiting the choice to names upon the approved list. Each year, it is proposed that the list be brought up to date by additions and deletions to keep it representative. The jury of three selected by the various professional societies consists of I. N. Phelps Stokes, Ralph Walker, and Kenneth Murchison, with William A. Sanders as alternate. The jury is about to start its work by sending a questionnaire to all registered architects in the city on the basis of which replies they hope to draw up the list of fifty approved architects.

Saturday, September 14.—One hears too little these days among the architects of opportunities developed under the National Housing Act and its "loans up to $50,000." There was plenty of talk in the early days of the National Housing Act, when the amount of credit available was limited to $2,000 for modernization. Now that it has been raised to $50,000, opening the door to a wide field of opportunity for the architect, one would have expected more of a fanfare. The number of instances in which money could profitably be used today for remodelling apartments, stores, hotels, and the like, is beyond count or even estimate. As Andrew J. Eken pointed out in the October ARCHITECTURE's installment of "Rebuild America," it will soon be widely recognized by the public that most of its more expensive apartment buildings are obsolete in that they do not provide the amenities afforded by even our low-cost housing projects of today. There is an opportunity here for the architect, and a duty devolving upon him to reverse the march of obsolescence for clients present or prospective, and one way to do it is afforded through the National Housing Act.

Monday, September 16.—Time is a commodity with which we are coming to deal rather efficiently, it would seem. Leaving the office in New York at five o'clock, I dined with Pierre Blouke and

Donald H. McNeal in Washington at six-thirty. The apparent impossibility of this is due to the combination of plane and the gain of an hour between the daylight system here and the standard time of Washington. Both of these men are with the Home Owners' Loan Corporation, having to do with the reconditioning of homes, chiefly, of course, of small size. It is difficult to visualize the extent of operations of this kind, amounting at the present time to three hundred thousand separate projects scattered from coast to coast and from Canada to the Gulf.

Tuesday, September 17.—The Cosmos Club at luncheon time today seemed almost like the headquarters of an A. I. A. convention. Lorimer Rich, Thomas Ellett, William Dewey Foster, Wesley S. Bessell, Eric Kebbon, Edwin Bateman Morris, and I were joined by Dean Cornwell, who had just brought down from New York his competition sketches for the new Post Office Building murals. At an adjoining table was Frederick V. Murphy entertaining Frederic Hirons of New York.

I wish Major Gilmore D. Clarke, the landscape member of the Fine Arts Commission, would get together with Harry Hopkins to put some of the nation's spare labor at the job of at least keeping the grass trimmed around the bases of our public buildings in Washington. We have spent many millions on the new buildings in the Triangle, but in front of Mr. Farley's new post-office there is a hay field, and along Constitution Avenue, what should be grass plots are, for the most part, hard-packed clay that would do no credit to the slums. In striking contrast is the superb condition of the planting about the Folger Library.

Wednesday, September 18.—I went up to the Capitol this afternoon to refresh my memory of the much discussed hangover of the dome above the east portal. Excepting for an encounter with a large Capitol rat under the front steps, the visit was uneventful, and merely strengthened my impression that this so-called æsthetic defect of the dome must be diligently sought out before it becomes visible.

Although I sincerely hope that nothing will be done to change the exterior of the Capitol, I found myself decidedly lukewarm about the interior. So far as my vote is concerned, Statuary Hall could have a lot of things done to it without hurting my respect for tradition and the value of early associations.

Thursday, September 19.—There seems to be just a suggestion of a lull in the visitors' activities in Building F—the place where the guest architects do their designing for the Procurement Division. It is probably just as well that there is this partial lull in the storm, for these men have each been turning out post-offices at the rate, I should say, of six or eight a year, which is a lot of post-offices for one man to design in that time. Back to New York by plane before noon.

Friday, September 20.—Up to the Park Department's architectural and engineering offices to select, with Aymar Embury and Joseph Hautman, some details of the Prospect Park Zoo. The Department's offices are in a large loft building, with three or four large floors filled to overflowing with architectural engineers and landscape men. It was reminiscent of a glimpse through one of our largest architectural offices in the far distant 1929, to see sixty or seventy-five men busily engaged, table to table. And the Park work that is being turned out by this organization under Robert Moses, with Aymar Embury and Gilmore D. Clarke as the designing heads, is of a very high standard indeed.

Saturday, September 21.—The Real Property Inventory made some months ago reveals a number of startling facts. For instance, of the 23,000,000 dwellings in this country that are not farm houses, 17 per cent are structurally unsafe; 13 per cent have no toilets whatever; 20 per cent have no bathing facilities; 15 per cent are being used in an overcrowded condition. Nor can the farm houses show any encouraging signs of progress in the art of living, for of the 6,000,000 farm homes, hardly 10 per cent measure up to what has been set as a minimum standard of health and decency. Who will say that there is not work for the architect ahead of us?

Monday, September 23.—Fifth Avenue is in part agog today over the so-called invisible glass display windows just installed in Marcus & Company's jewelry store. An Englishman named Pollard devised this ingenious scheme for doing away with reflections from the outside. Of course, the same effect has been attempted through the scheme of making the inside lighting of a window stronger than the outside lighting, which, however, is somewhat difficult when one is competing with bright sunlight.

* * *

Wednesday, September 25.—Lunched with Julian Levi, recently back from Paris filled with enthusiasm over the prospects of the exposition in 1937. World fairs are apparently going to be very much with us for some time to come—San Diego this year; 1937, Paris; 1938, San Francisco; 1939, New York City; 1940, Tokyo.

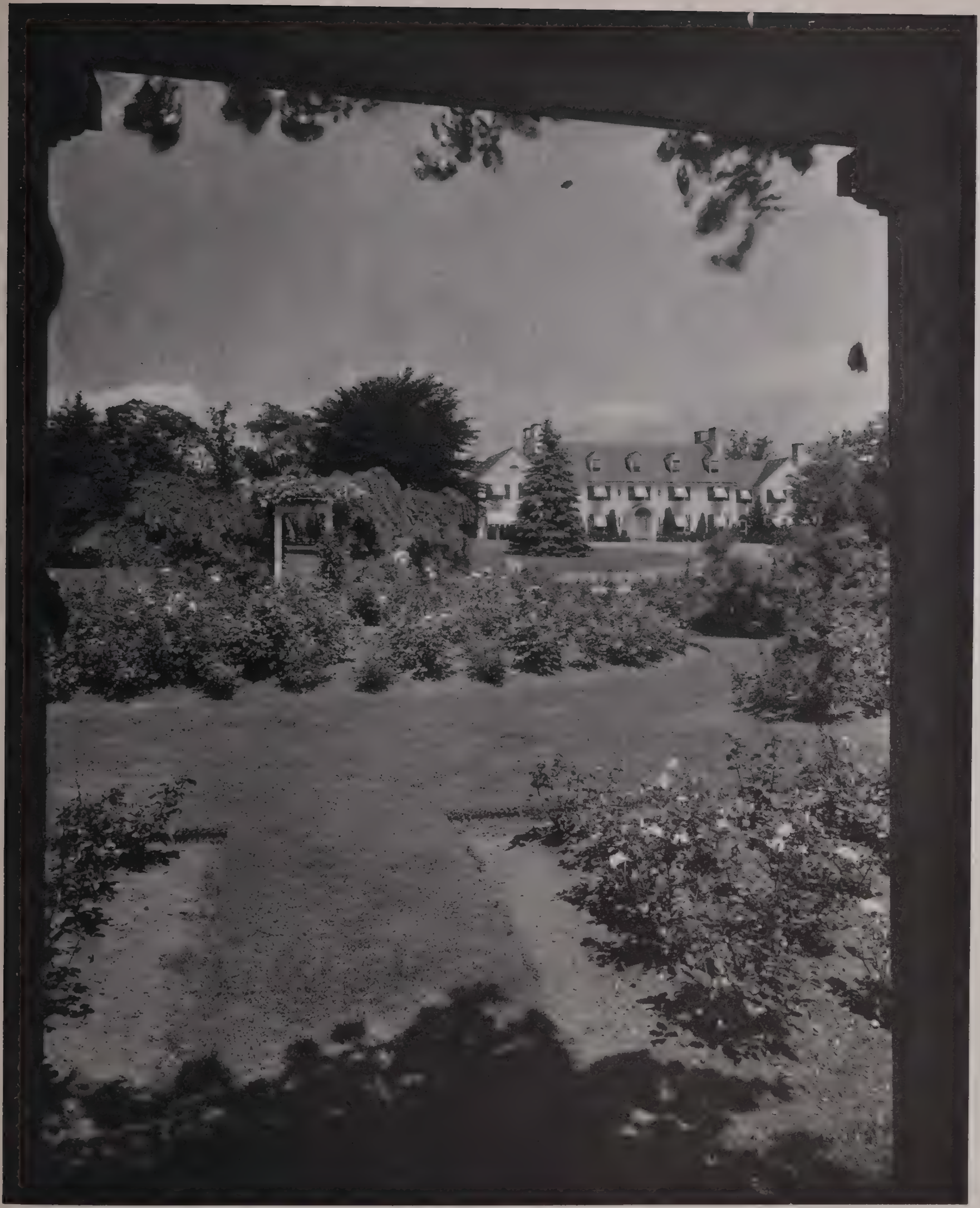
The press and a few other invited guests were privileged to see the new Hayden Planetarium in action late this afternoon. Introduced by F. Trubee Davison, who is president of the American Museum of Natural History, Admiral Byrd whirled us around the globe to the South Pole to show us how the heavens would look from that viewpoint, then to the North Pole, and finally back to our own more insignificant point of longitude. The planets marched across the heavens, speeded up so that their paths would be more easily visible to our eyes. The moon marched by in its various phases. A famous comet appeared and disappeared, reproducing for us its wanderings near the earth some seventy-five years ago. The building, which consists chiefly of a hemispherical dome seventy-five feet in diameter, was designed by Trowbridge & Livingston, and we hope to show, before long, some of the details in these pages.

Thursday, September 26.—A newspaper report from Castel Gandolfo today quotes Pope Pius as expressing his public disapproval of modern architecture for Catholic churches. In receiving the French delegates to the International Architects' Congress, the Pontiff told them that their art should "glorify the church," adding that "unfortunately" modern architecture does not meet the requirements of religion.

Friday, September 27.—Dropped into York & Sawyer's office this afternoon to find six or eight of Samuel Yellin's "sketches" on the library table. In setting about the creation of a grille, let us say, Yellin does not start with a drawing. He starts with a bar of iron and an anvil and a hammer. Having worked out to his satisfaction some simple motif for crossing two bars, he sends this to the drafting-room and has it drawn as a repeat, to see what it looks like in a field. Then back to the forge for changes in scale, spacing, texture, or what not—or perhaps the thing is discarded entirely.

These "sketches" then, are panels perhaps 12 by 18 inches in size, each showing an entirely new and beautiful way of crossing iron bars in a decorative pattern. One would think that the crossing of two iron bars permitted of no great variety of treatment, and that the beautiful work that has come down to us from Italian, Spanish, English, and French sources would have about exhausted the possibilities. One has only to see these sketches of Yellin's to realize that such is not the case, that the field of possibilities in this rather restricted phase of design has only been scraped on the surface.

Monday, September 30.—Timothy L. Pflueger in from San Francisco on one of his frequent pilgrimages east to find out what is going on. I told him he must be sure to see the Triborough Bridge in progress, the details of which would interest him particularly, since he has been working on the bridge at the other side of the Continent, spanning San Francisco Bay.



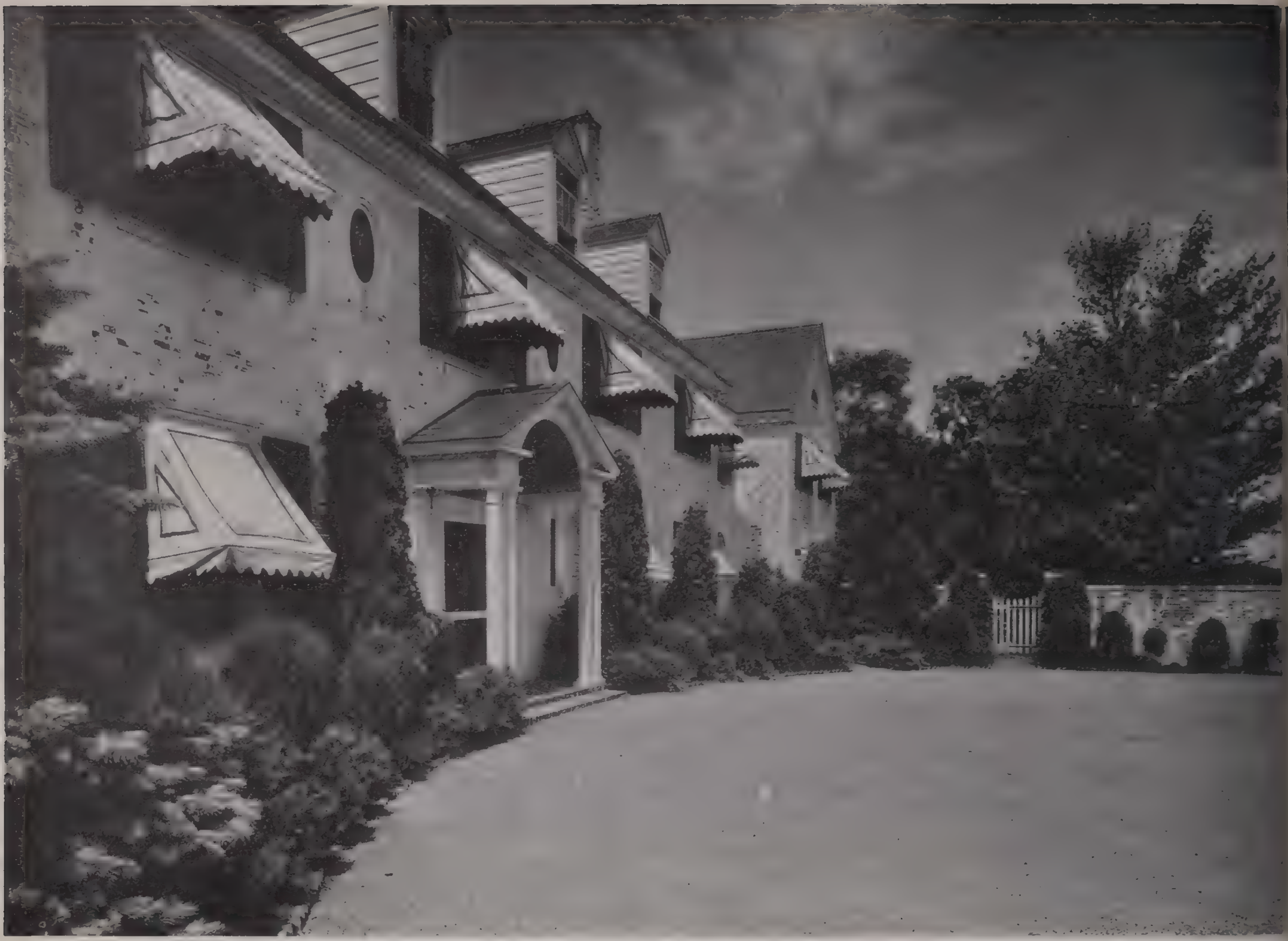
House of H. W. Lowe

Wheatley Hills, N. Y.

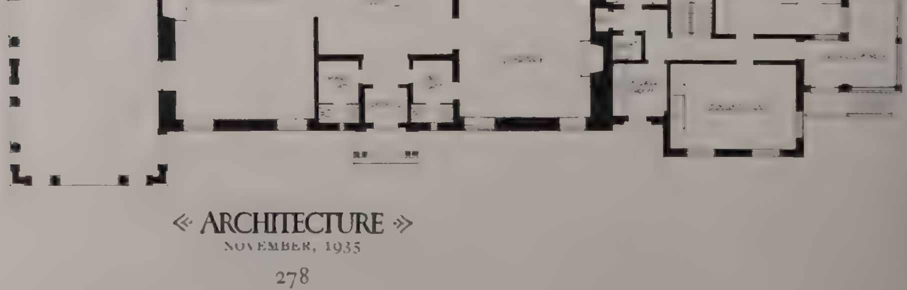
OFFICE OF JOHN RUSSELL POPE,
ARCHITECT

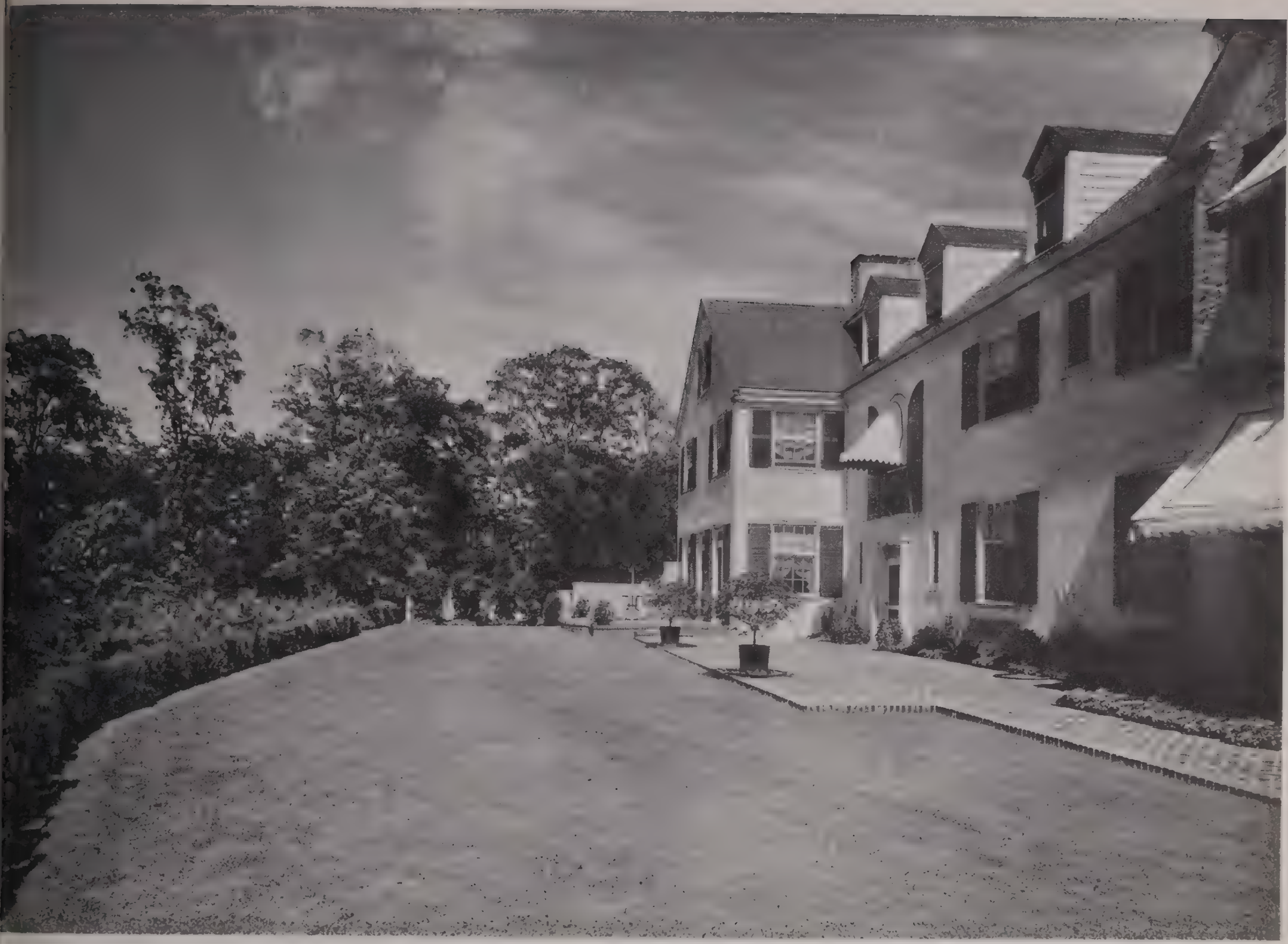
The house stands upon a high point commanding a view over its gardens to rolling hills, woods, and pasture land

Photographs by Robert M. Glasgow

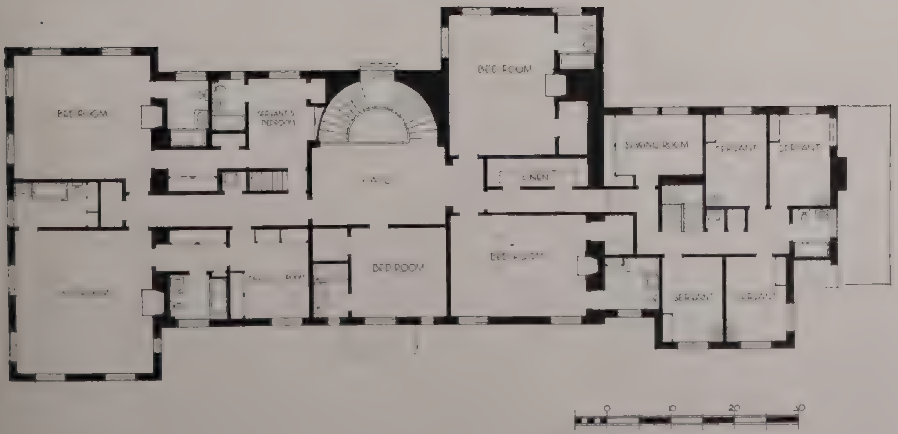


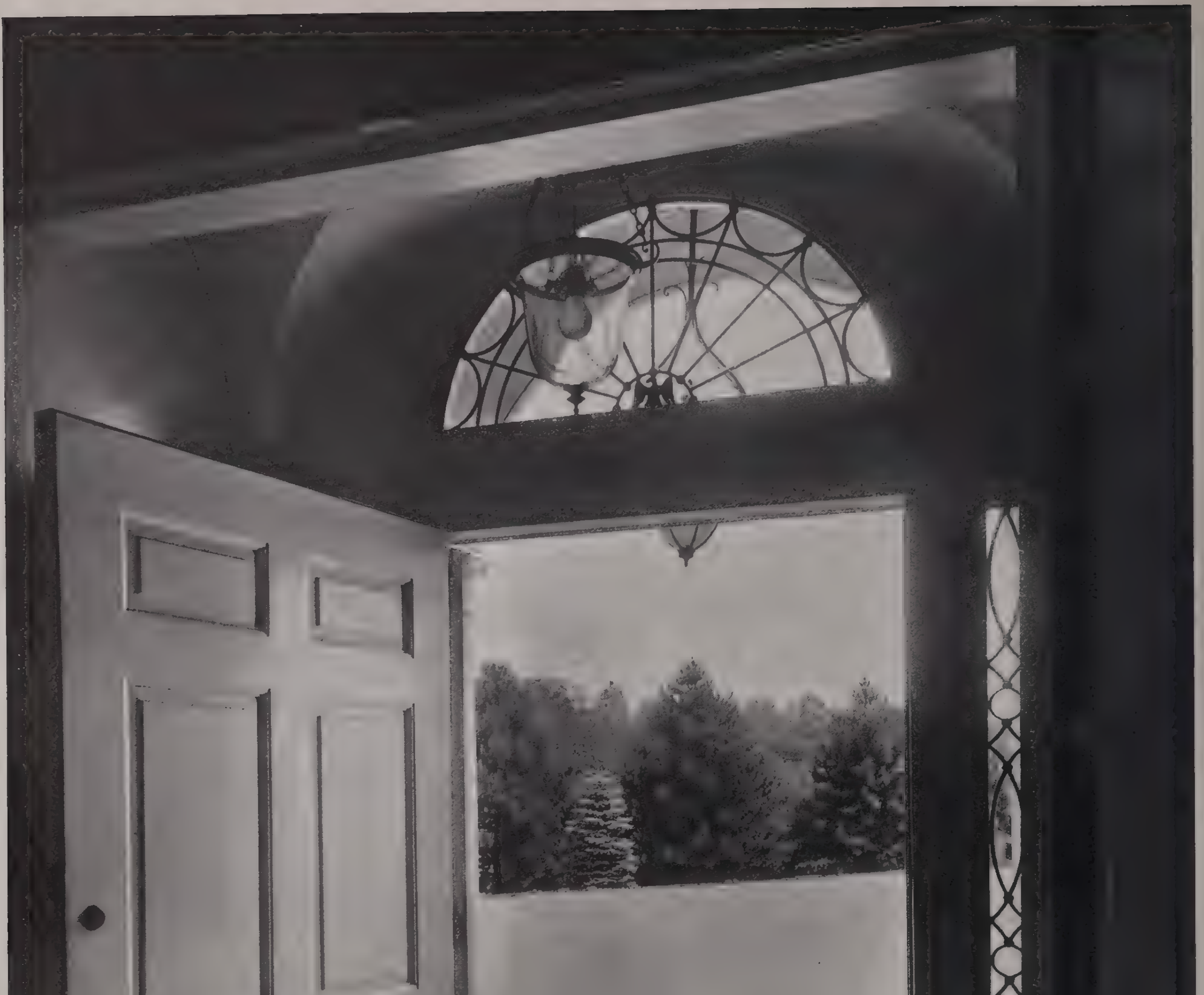
The house is built of common brick painted white. Shutters are green; awnings, white with a green stripe. Above, the photograph shows the entrance front, facing a large motor court at the end of the entrance driveway. At the far end, a brick wall screens the service court at a lower level



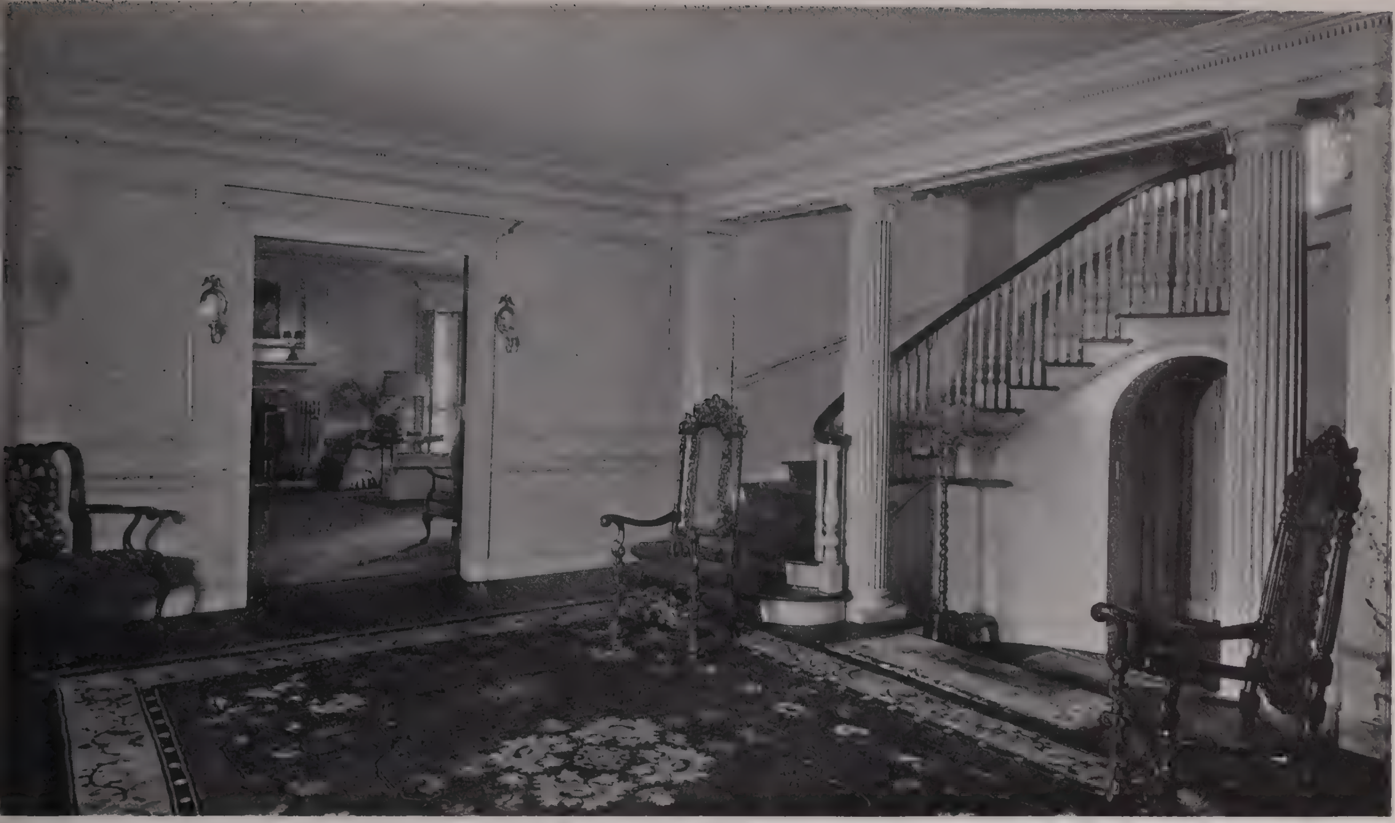


A brick-paved terrace extends almost the whole length of one side of the house, connecting the porch with the dining terrace at a slightly higher level, at the far end. The roof is of slate; dormers have clapboarded sides



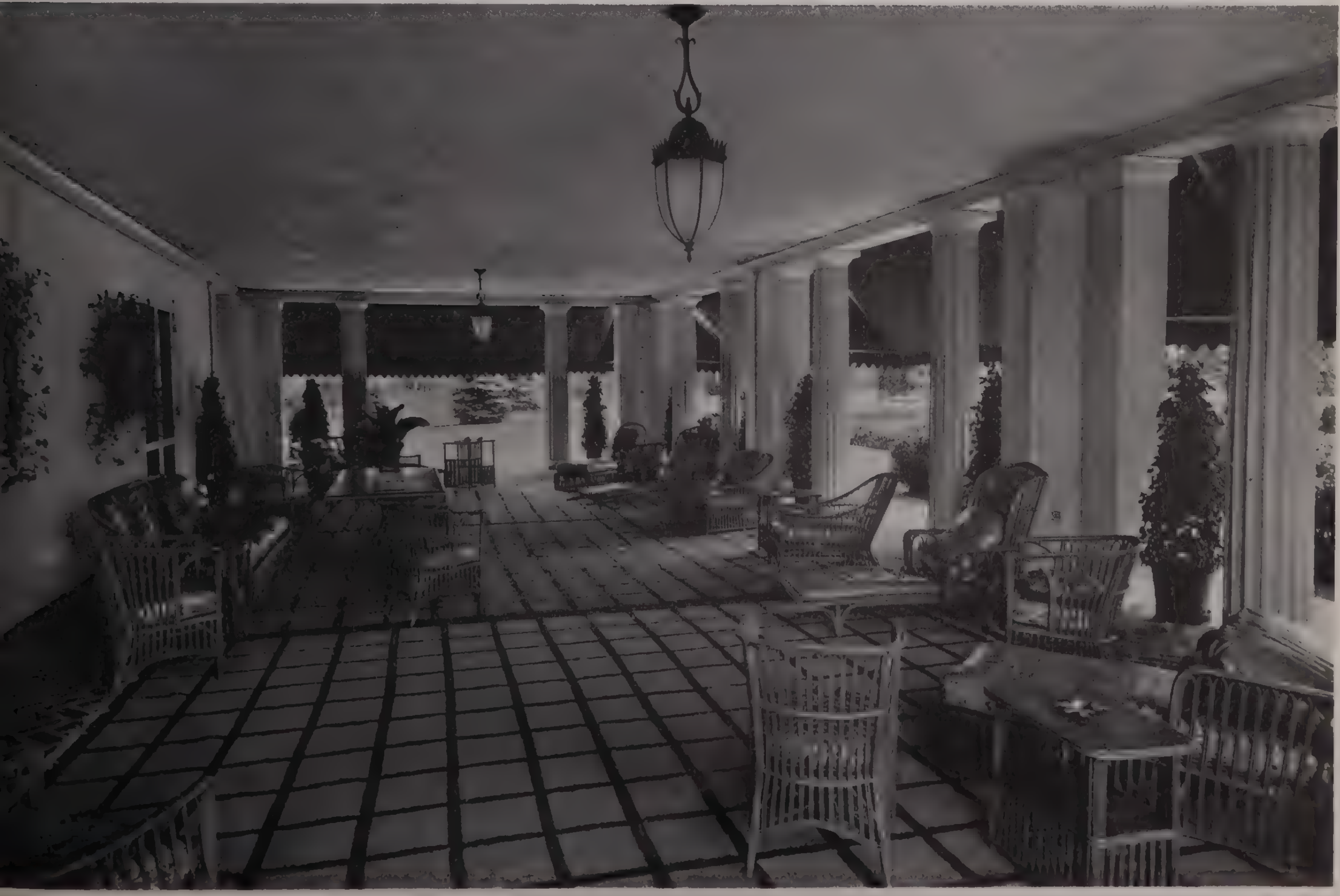


Looking out of the entrance door upon the small brick-paved porch and the motor court. Outside trim is white. Side-lights and fanlight are leaded. The floor of the vestibule is black and white marble

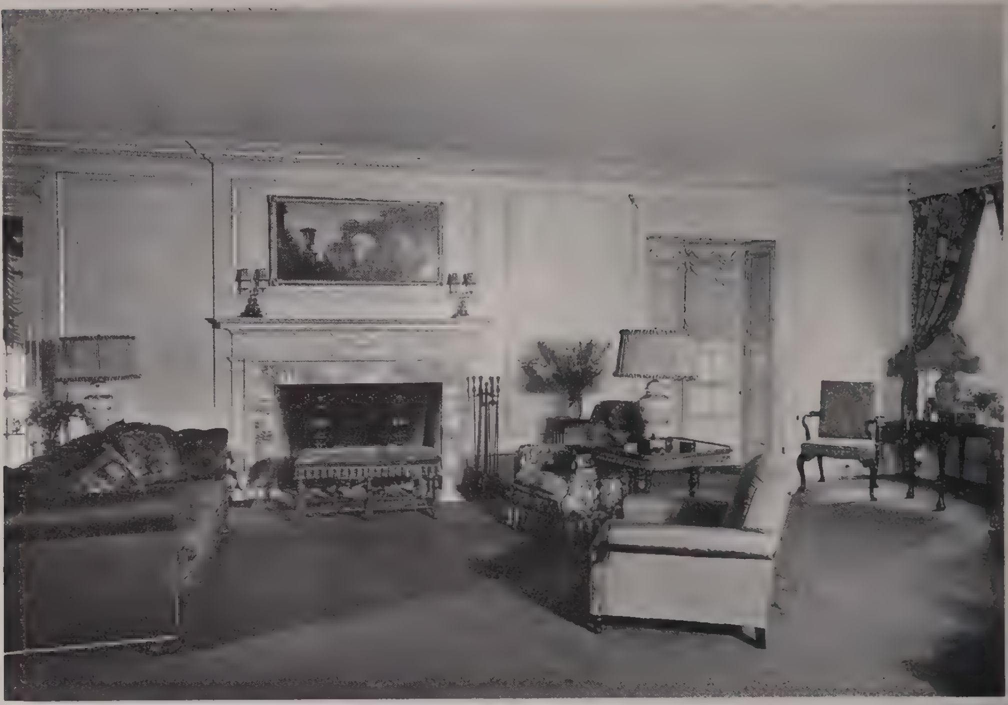


The hall. Woodwork is white, shaded towards cream, with a mahogany handrail on the stairs. Floors are of oak stained rather dark

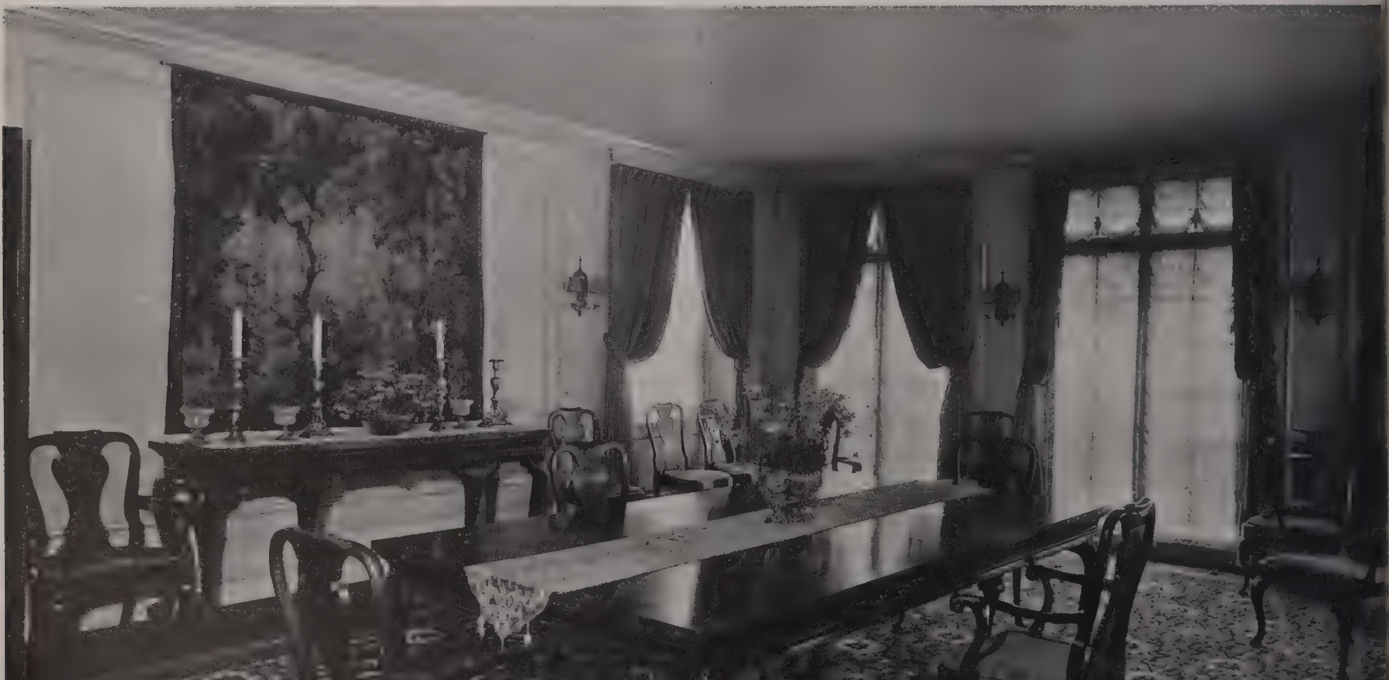
The great porch is, as will be seen by the plan on page 278, a dominating feature of the house. Summer rugs and wicker furniture in its natural color make it an outdoor living-room

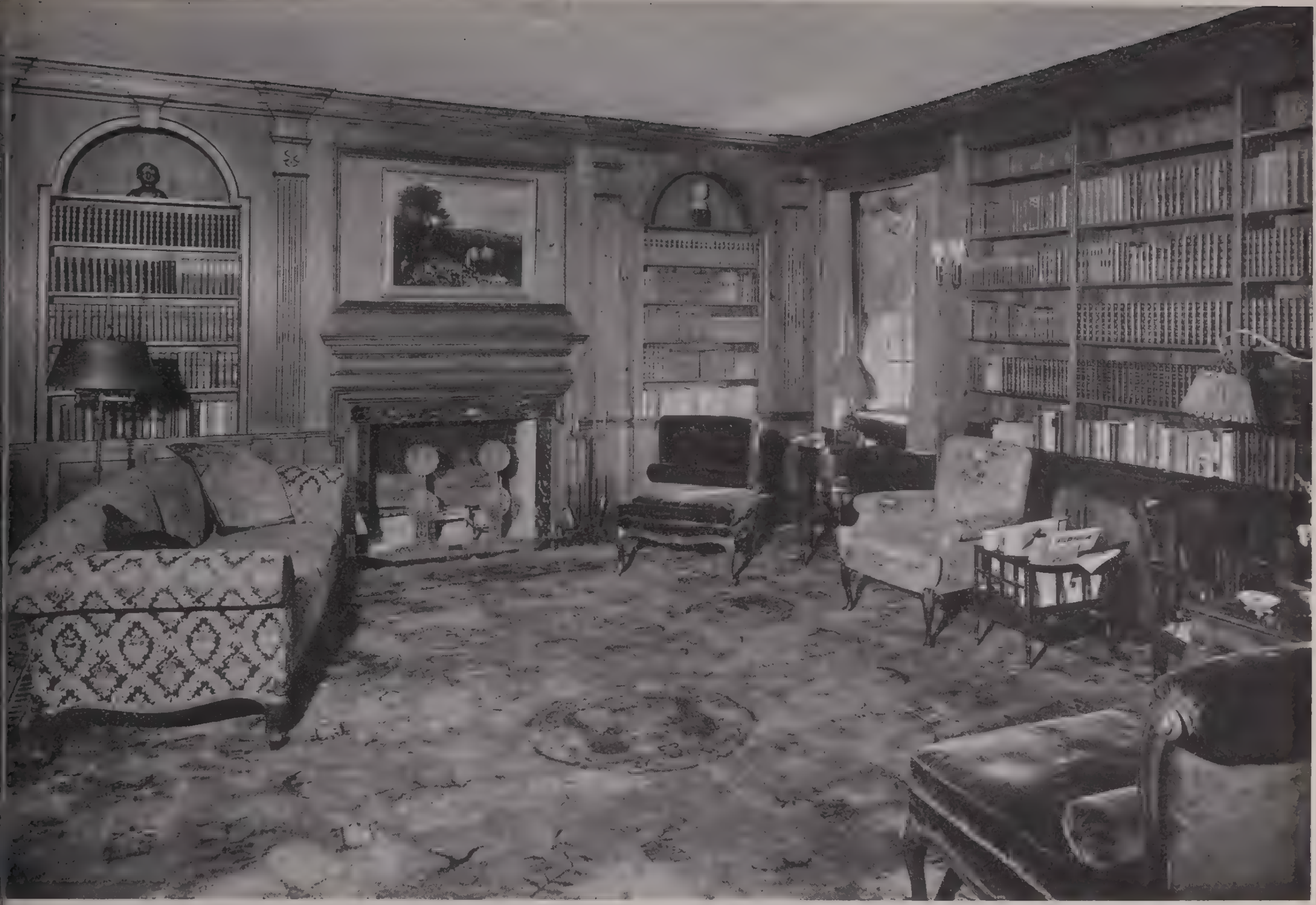


Fireplace side of the living-room. Here again the woodwork and walls are light cream color, enlightened by the over-mantel painting, the bright hangings, and the upholstery

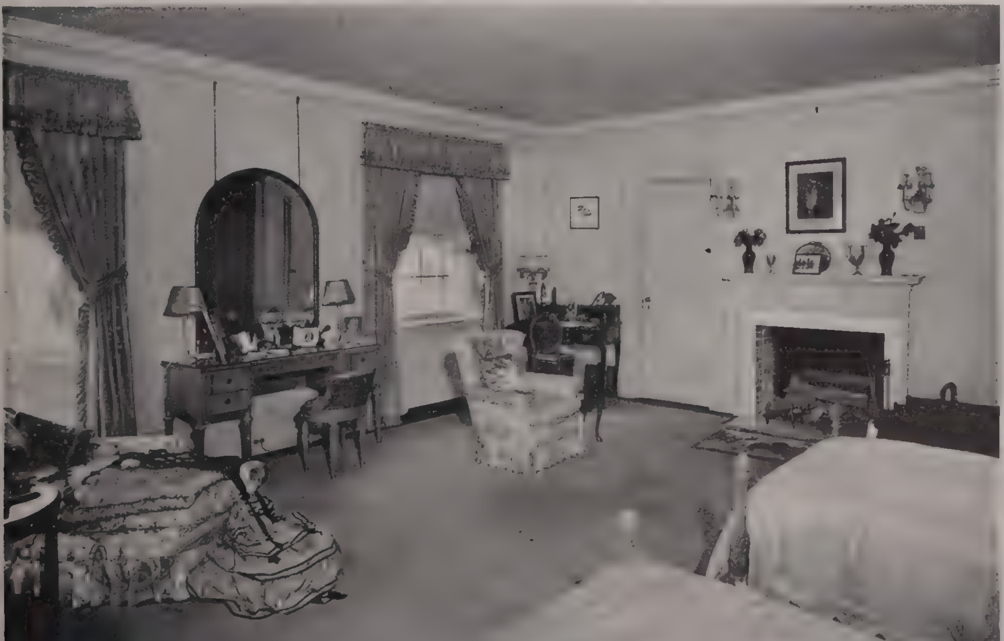


The dining-room, one end of which is almost all glass, with a dining terrace adjoining

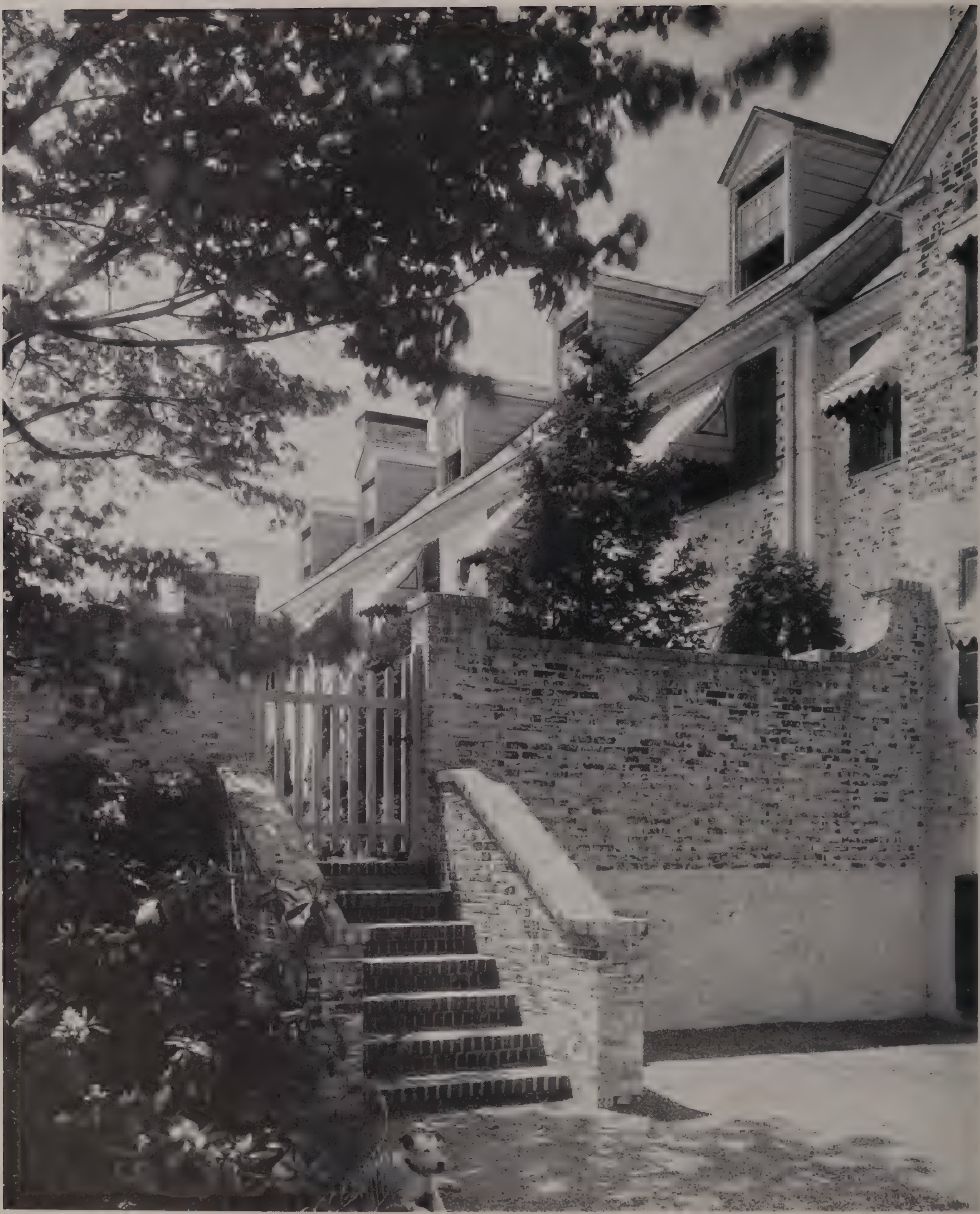




The library is in pine to the ceiling, and the wood has been given a rather dark stain before being waxed



One of the bedrooms. It will be noticed in the plan of the second floor, on page 279, that four of the bedrooms have fireplaces. The panel effect of the walls is secured by the use of wood moldings on the plaster



A brick wall separates the terrace side of the house from the service court on a lower level

NUMBER 109 IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF
UNUSUAL BRICKWORK

Subjects of previous portfolios are listed below at left and right of page

1926
DORMER WINDOWS
SHUTTERS AND BLINDS

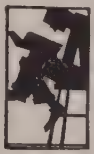
1927
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

1931
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS



Below are the subjects of forthcoming Portfolios

Shutters and Blinds
DECEMBER

Fireplaces
(MEDITERRANEAN TYPES)
JANUARY

Pediments
FEBRUARY

Balcony Railings
(INTERIOR)
MARCH

Gothic Buttresses
APRIL

Corner Windows
MAY

Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication date.

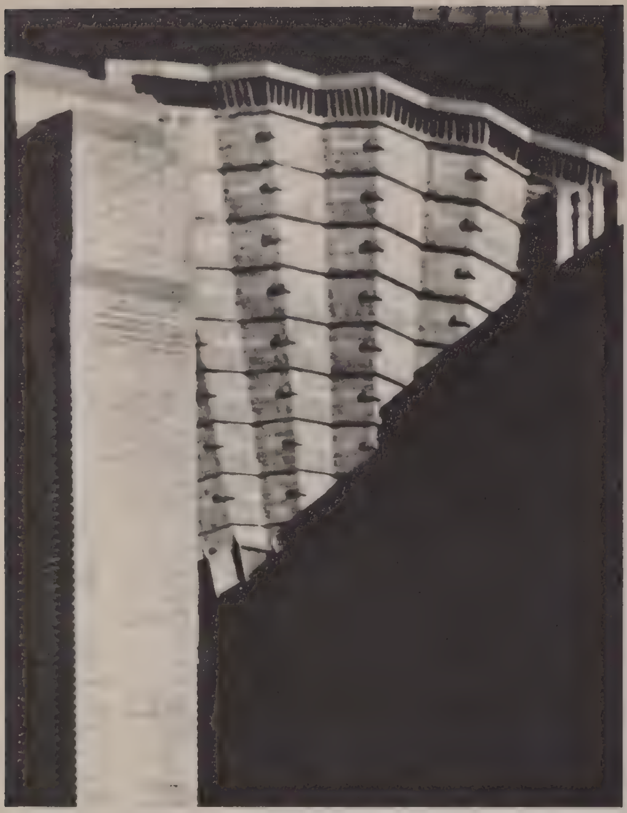
1931—*Continued*
GARAGE DOORS
MAIL-CHUTE BOXES
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS
PARAPETS

1932
RADIATOR ENCLOSURES
INTERIOR CLOCKS
OUTSIDE STAIRWAYS
LEADED GLASS MEDALLIONS
EXTERIOR DOORS OF WOOD
METAL FENCES
HANGING SIGNS
WOOD CEILINGS
MARQUISES
WALL SHEATHING
FRENCH STONEWORK
OVER-MANTEL TREATMENTS

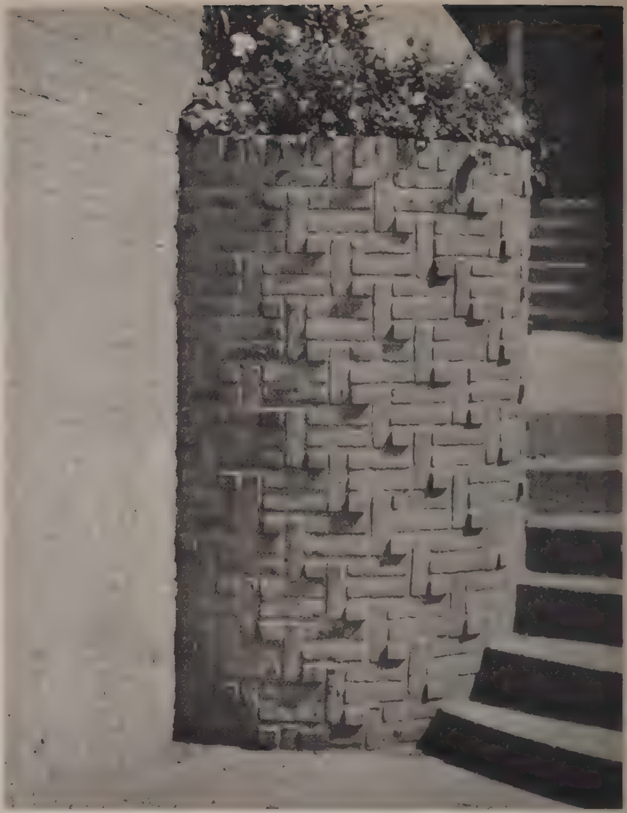
1933
BANK SCREENS
INTERIOR DOORS
METAL STAIR RAILINGS
VERANDAS
THE EAGLE IN SCULPTURE
EAVES RETURNS ON MASONRY
GABLES
EXTERIOR LETTERING
ENTRANCE DRIVEWAYS
CORBELS
PEW ENDS
GOTHIC NICHES
CURTAIN TREATMENT AT WINDOWS

1934
EXTERIOR PLASTERWORK
CHURCH DOORS
FOUNTAINS
MODERN ORNAMENT
RUSTICATION
ORGAN CASES
GARDEN FURNITURE
WINDOW HEADS, EXTERIOR
SPIRES
BUSINESS BUILDING LOBBIES
ROOF TRUSSES
MODERN LIGHTING FIXTURES

1935
CIRCULAR WINDOWS, GOTHIC AND ROMANESQUE
TILE ROOFS
MOLDED BRICK
DORMER WINDOWS
ENTRANCE SEATS
OVERDOORS, INTERIOR
BRICK CORNICES
SIGNS
CHIMNEY OFFSETS
WINDOW HEADS, EXTERIOR, ARCHED

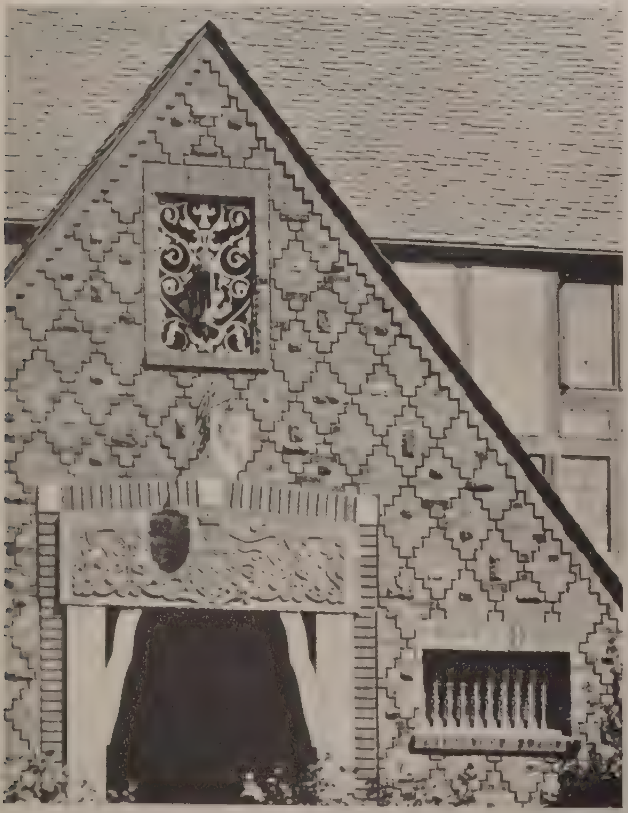


Western Union Building, New York City
Voorhees, Gmelin & Walker

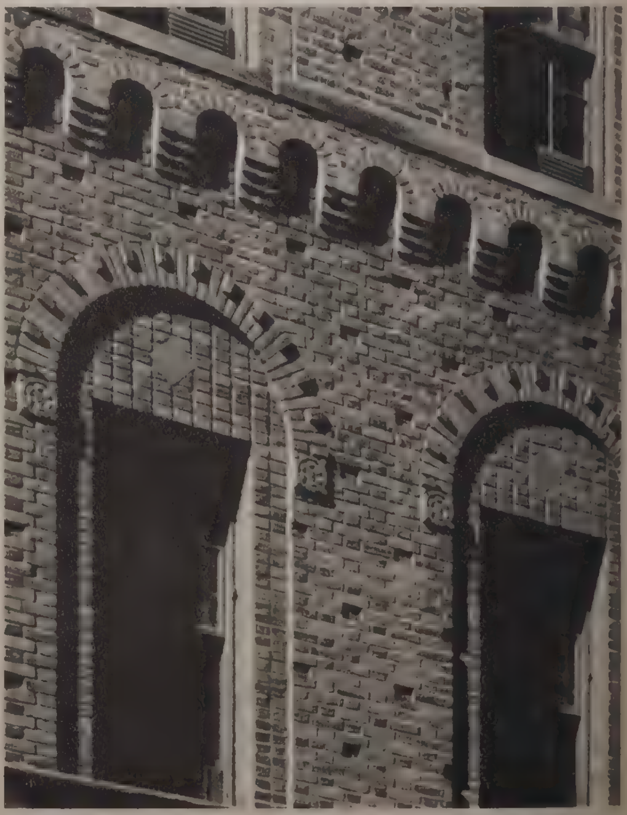


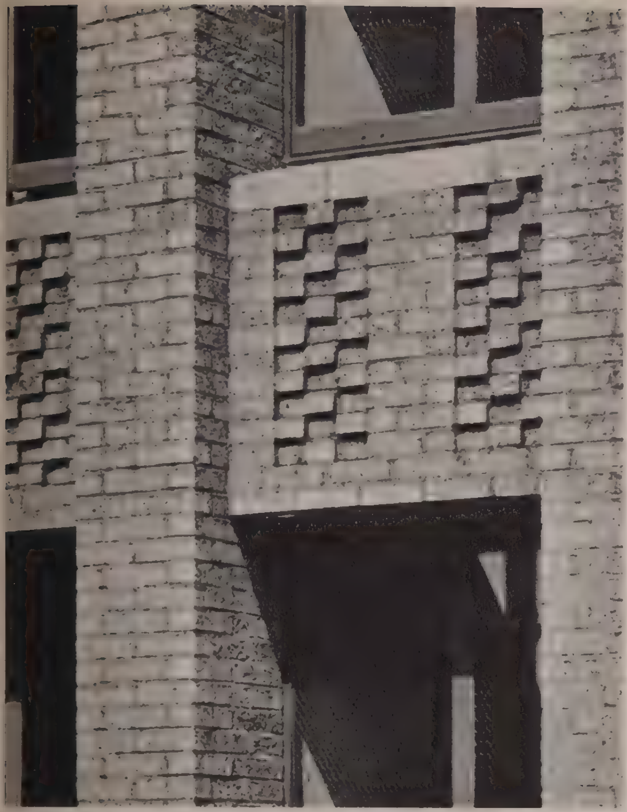
Steps at side of Catherine Bridge
Utrecht, Holland

House at Hollywood, Calif.
L. G. Scherer

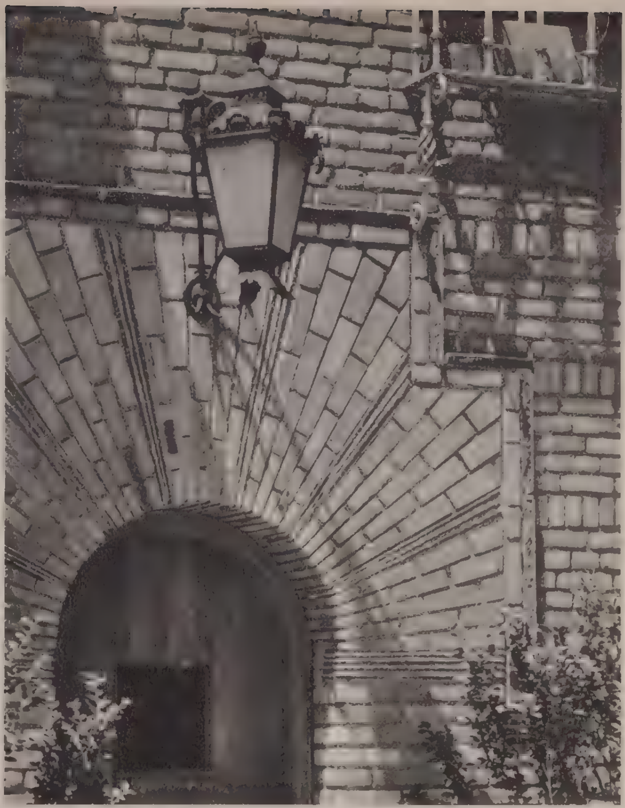


Bible House, New York City
McKenzie, Voorhees & Gmelin



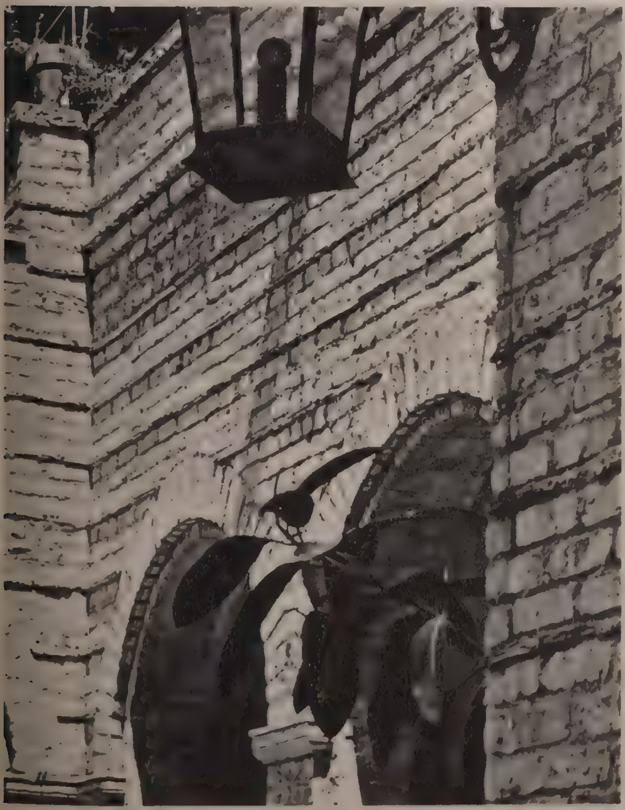


Northern Life Tower, Seattle, Wash.
A. H. Albertson; Joseph W. Wilson &
Paul Richardson

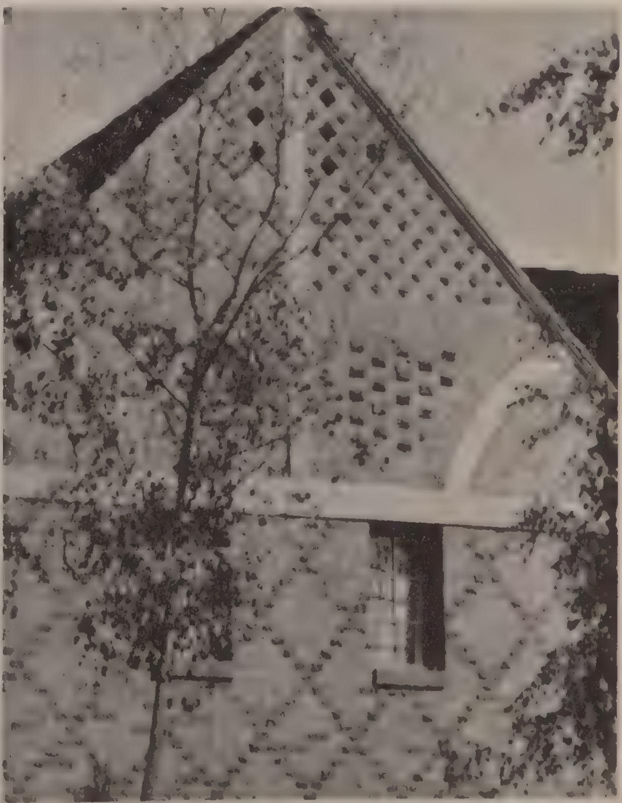


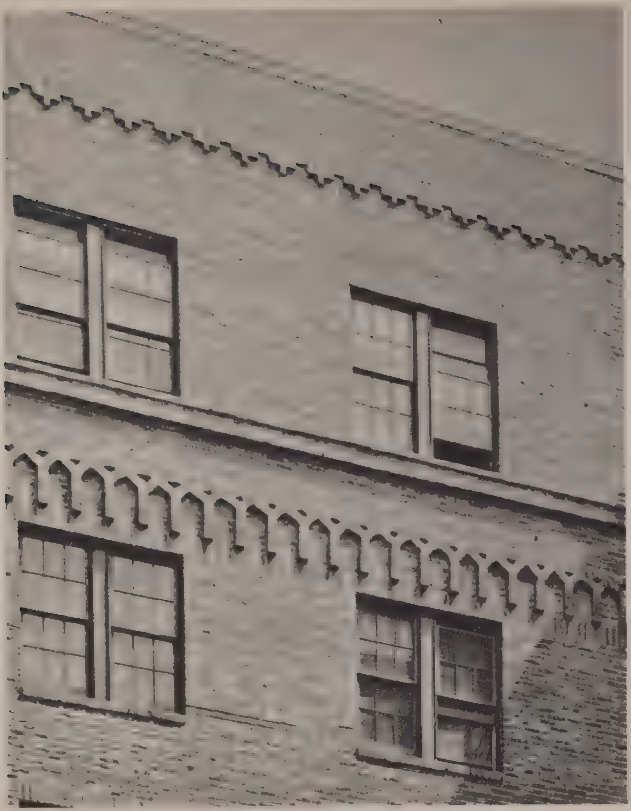
Van Tassel Apartments, North Tarrytown, N. Y.
Andrew J. Thomas

Cosmopolitan Club, New York City
Edward C. Dean

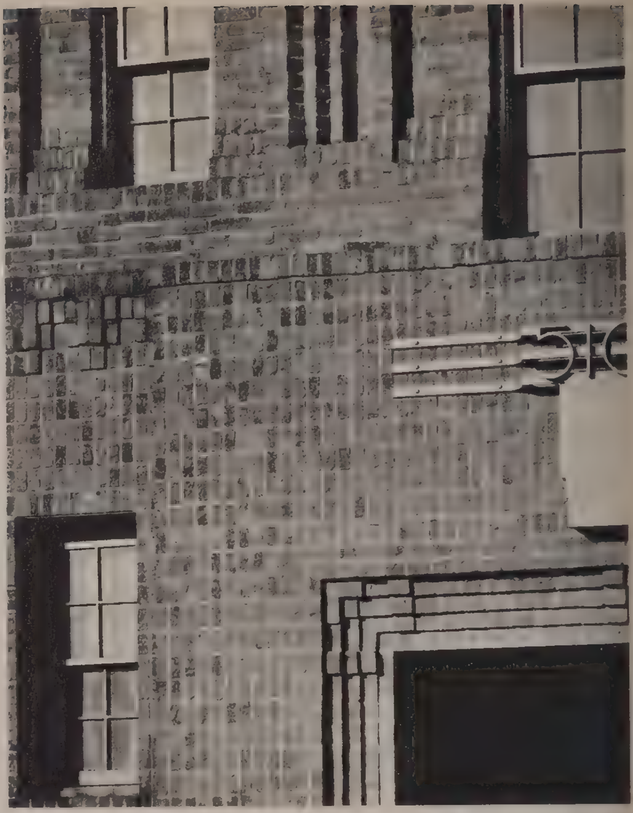


House at Hollywood, Calif.
L. G. Scherer



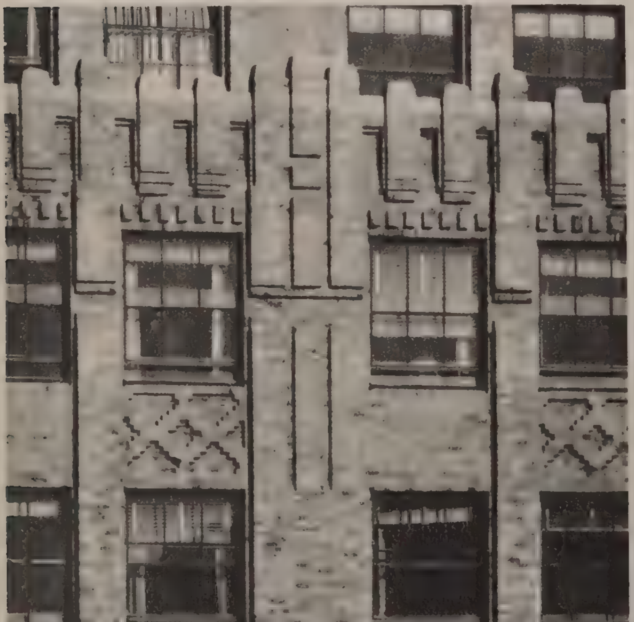


Beekman Terrace Apartments, New York City
Treanor & Fatio

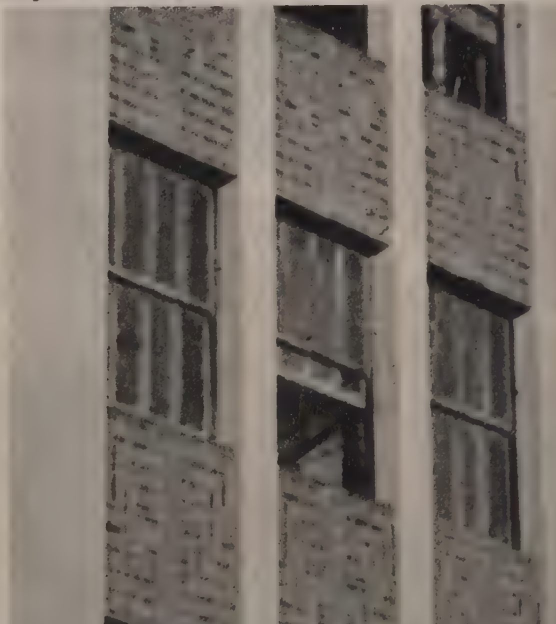


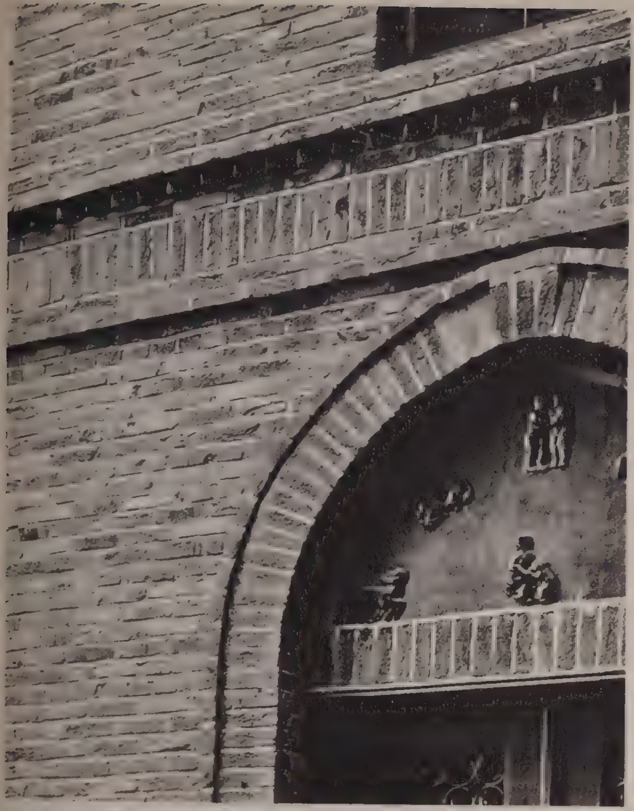
Phipps Garden Apartments, Sunnyside, N. Y.
Clarence S. Stein

Harriman Building, New York City
Cross & Cross

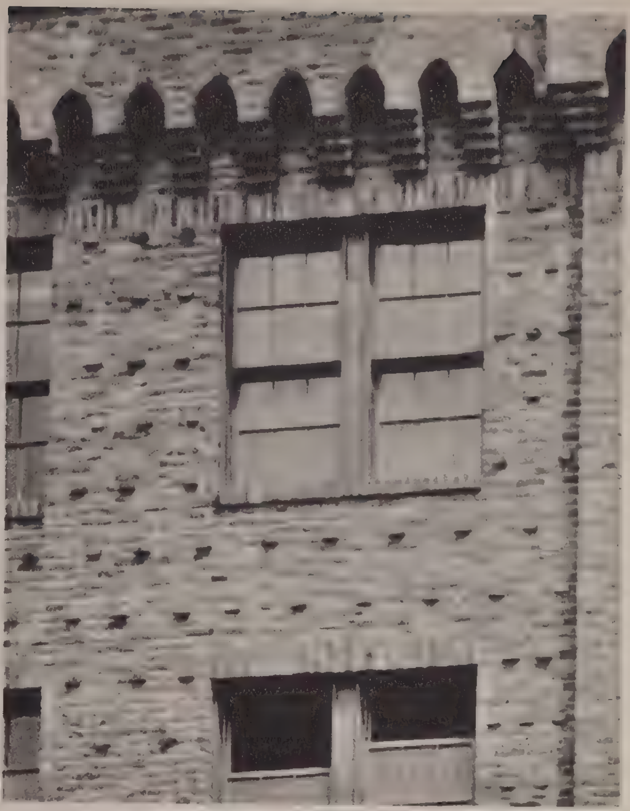


Daily News Building, New York City
Raymond Hood, Godley & Fouilhoux



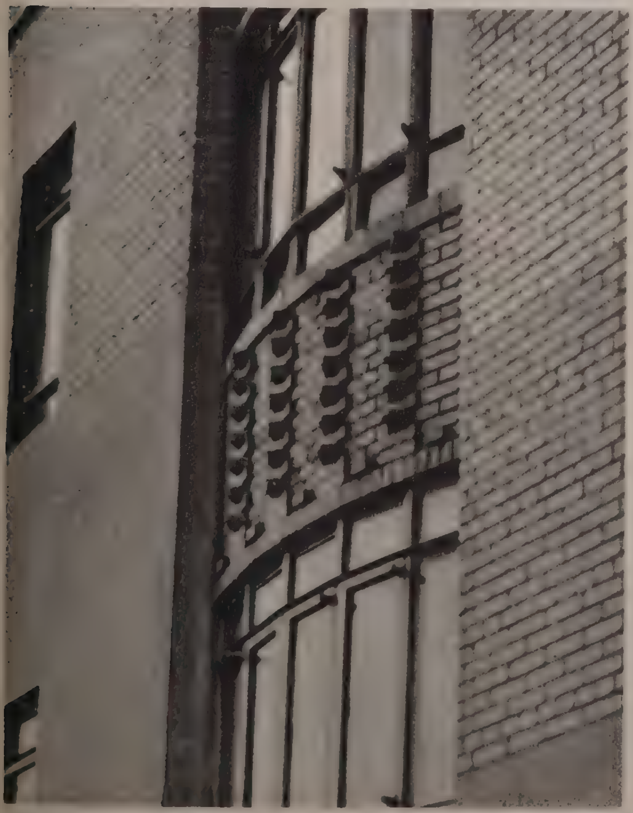


Beekman Terrace Apartments, New York City
Treanor & Fatio

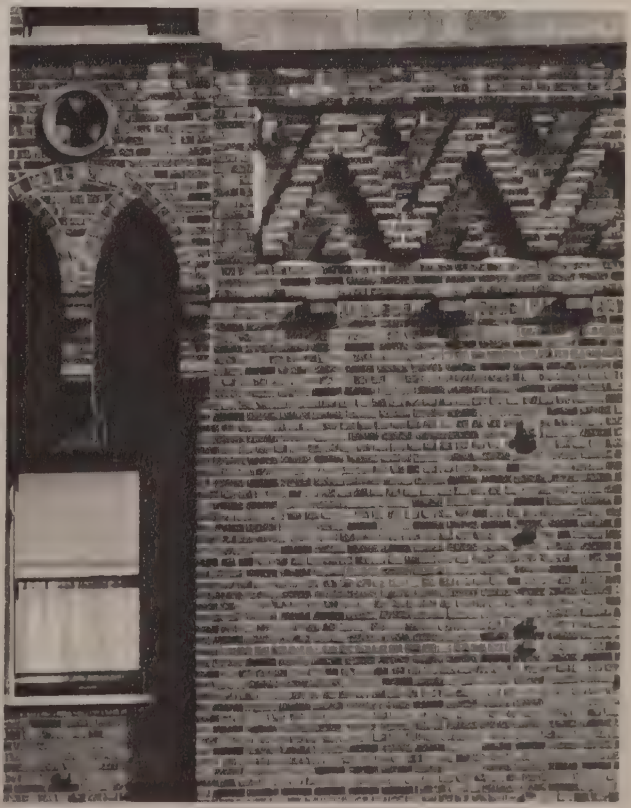


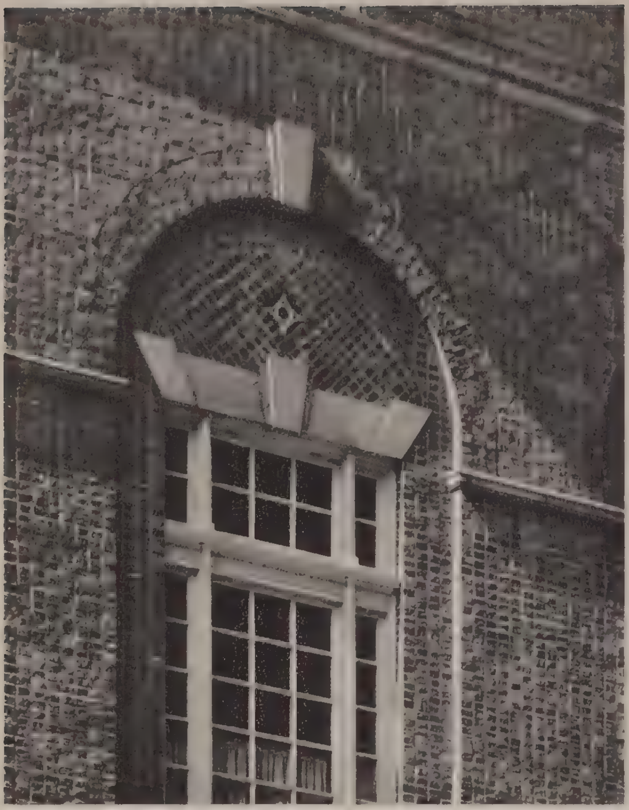
Beekman Terrace Apartments, New York City
Treanor & Fatio

Century Apartments, New York City
Irwin S. Chanin

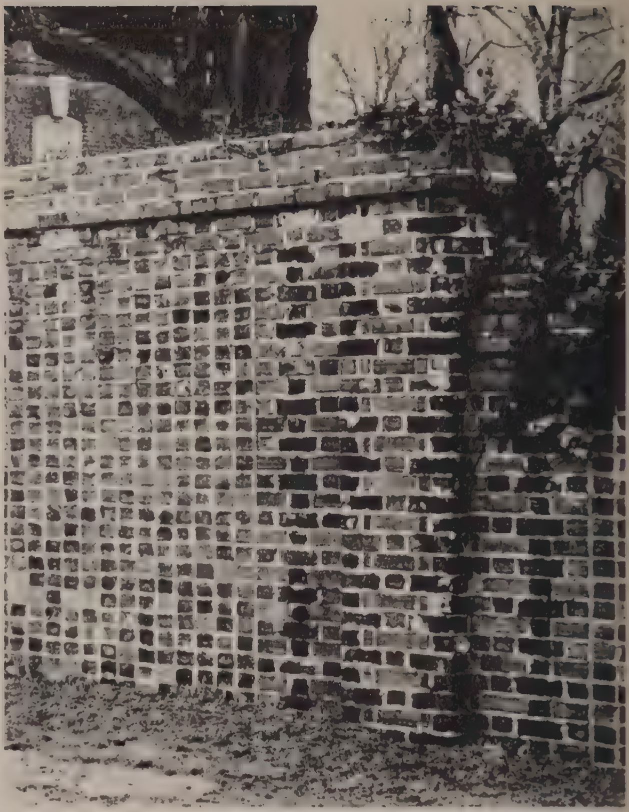


Hotel Shelton, New York City
Arthur Loomis Harmon



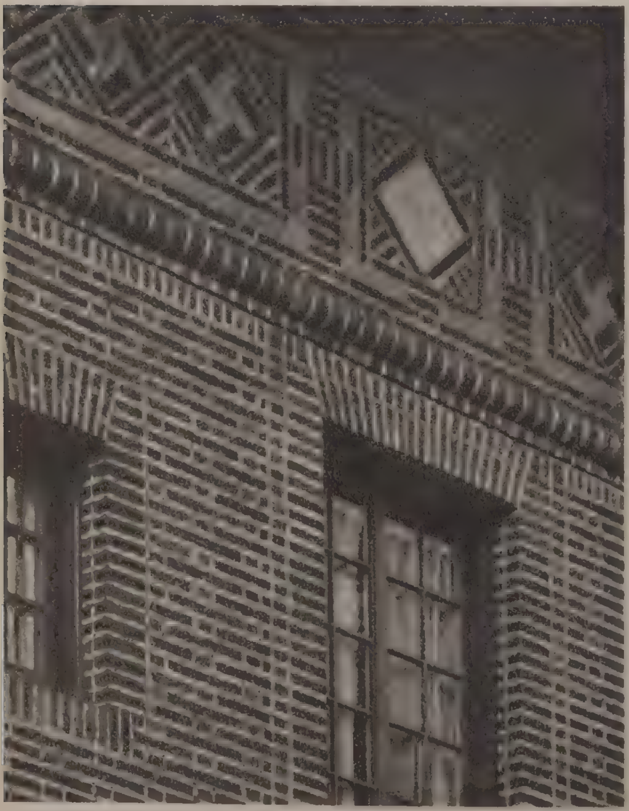


Former Colony Club, New York City
McKim, Mead & White

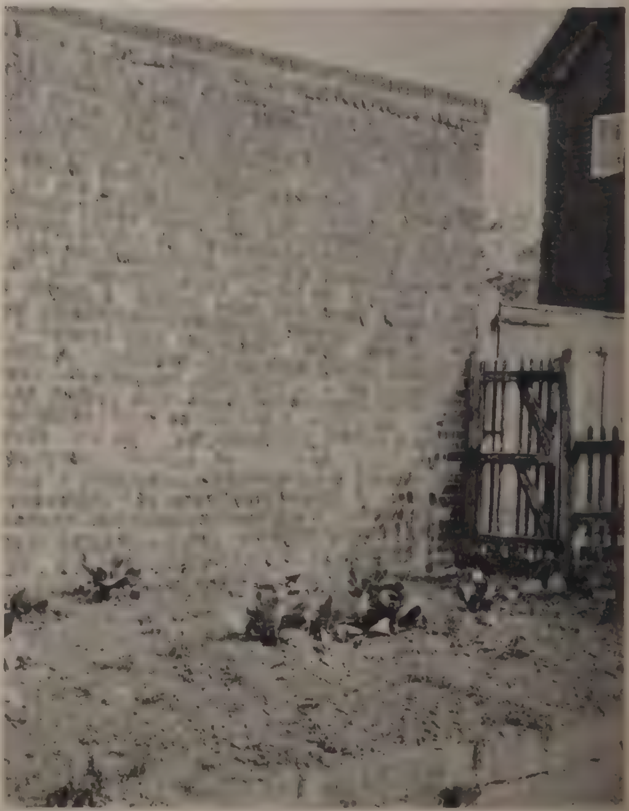


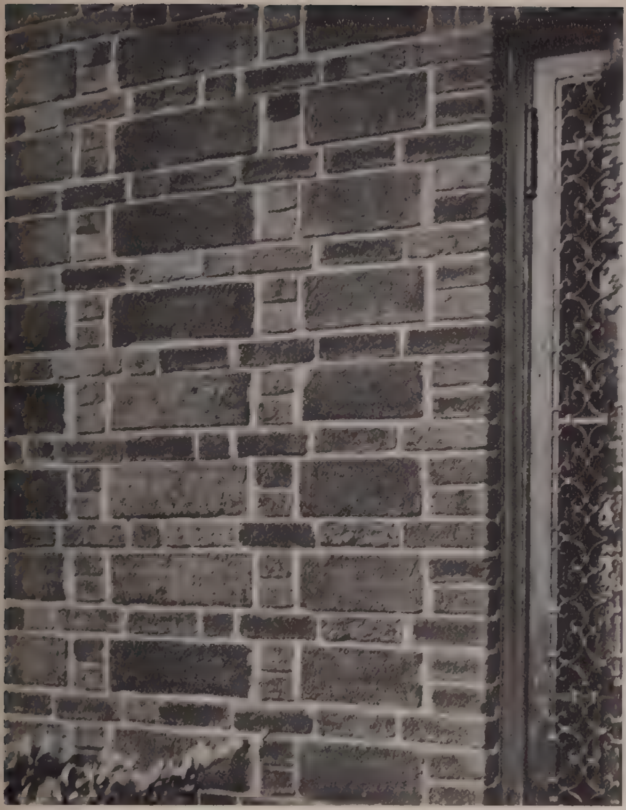
Garden Wall, Nelson House,
Yorktown, Va.

McLean House, Washington, D. C.
Office of John Russell Pope

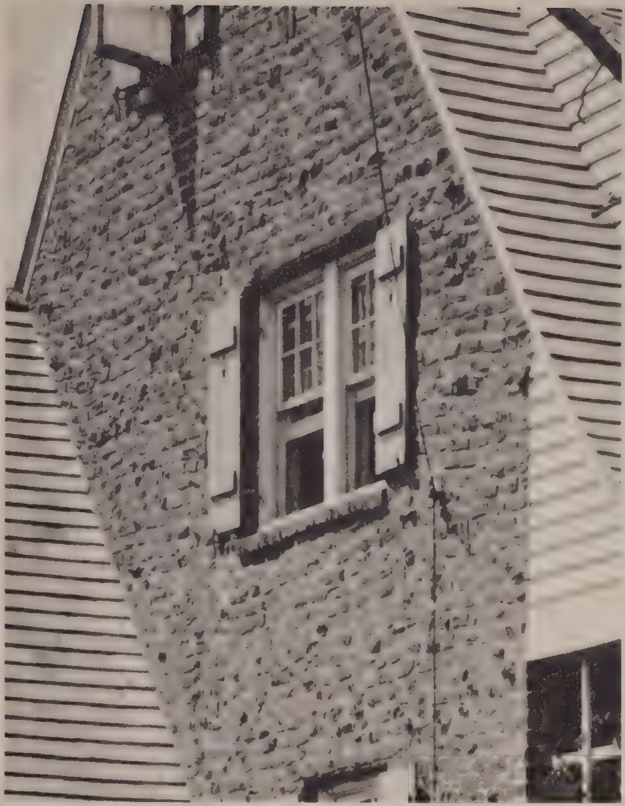


Garden wall,
Nayland, England



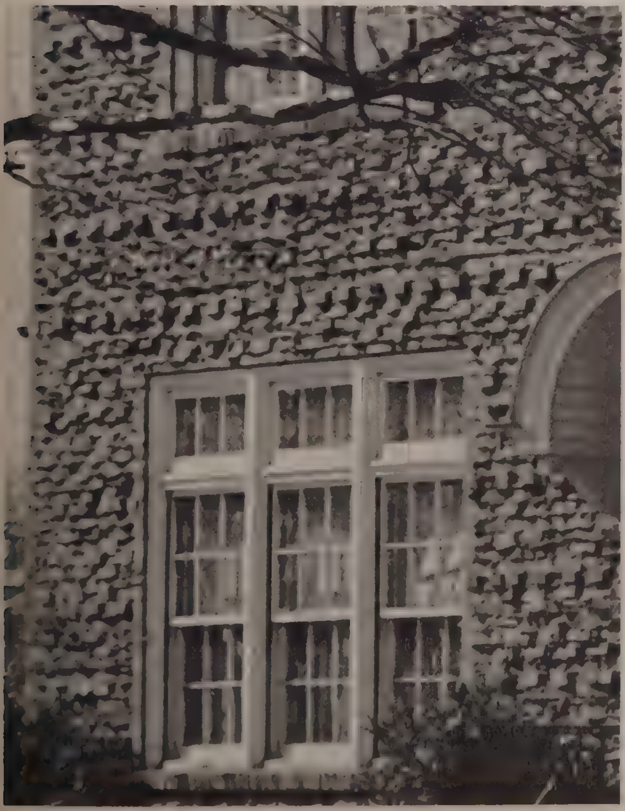


Milner House, Birmingham, Ala.
Warren, Knight & Davis

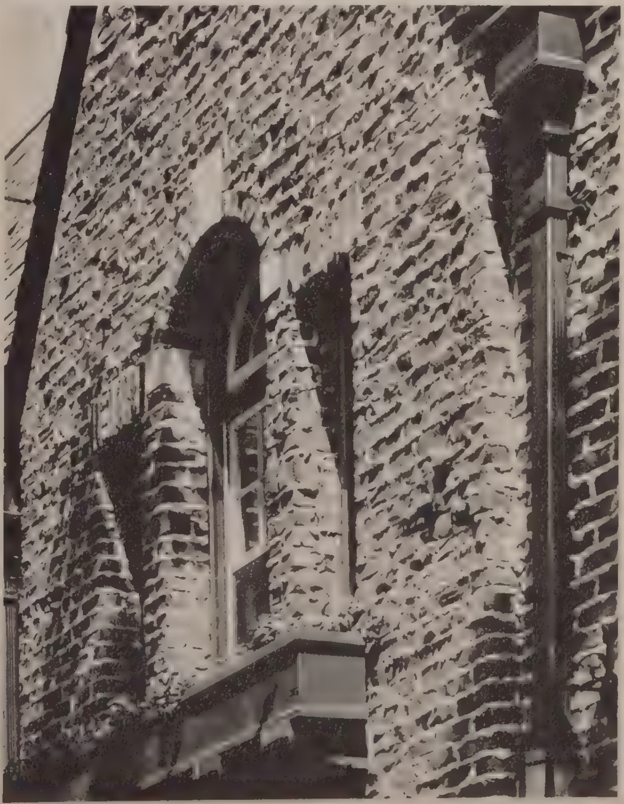


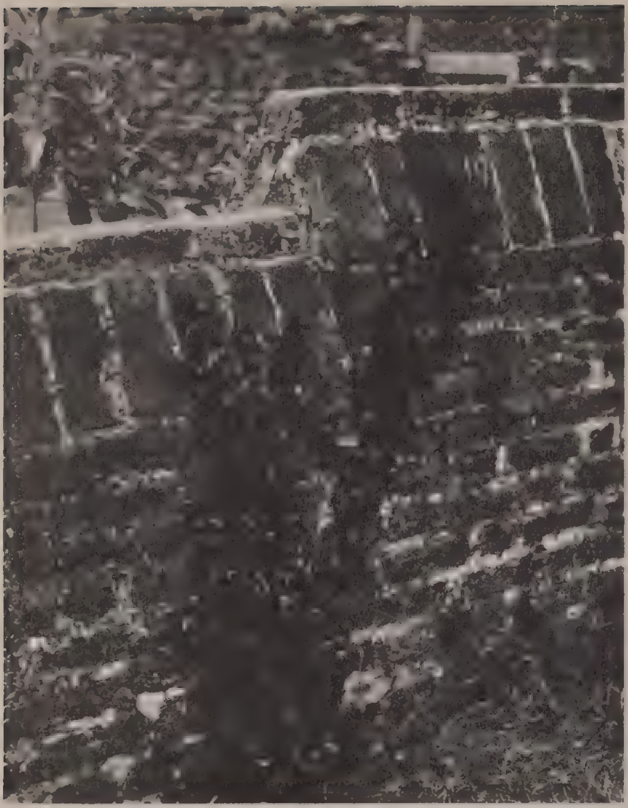
Wilcox House, Tenafly, N. J.
Frederick T. Warner

Skintled brickwork, Wilmington, Del.
Roscow Cook Tindall

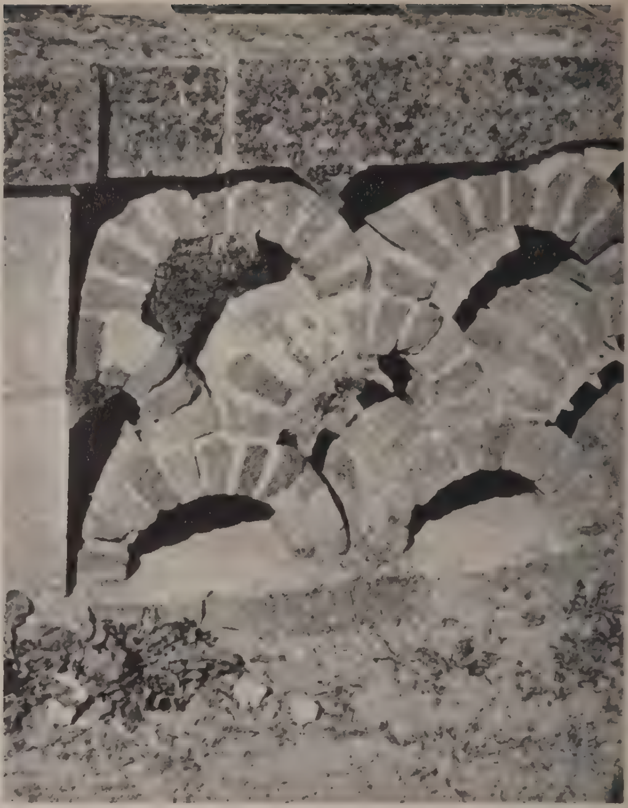


Skintled brickwork, Birmingham, Ala.
Warren, Knight & Davis



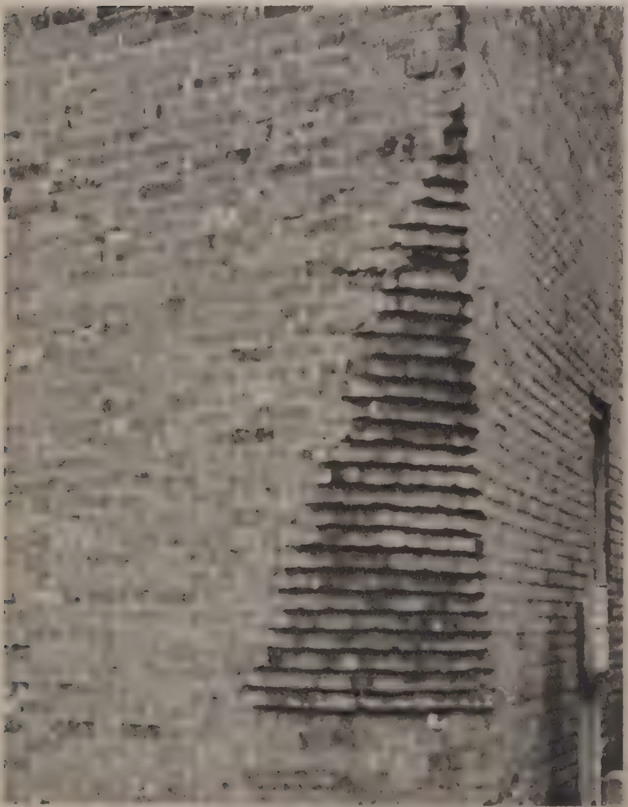


Garden Wall of Stratford
Westmoreland County, Va.

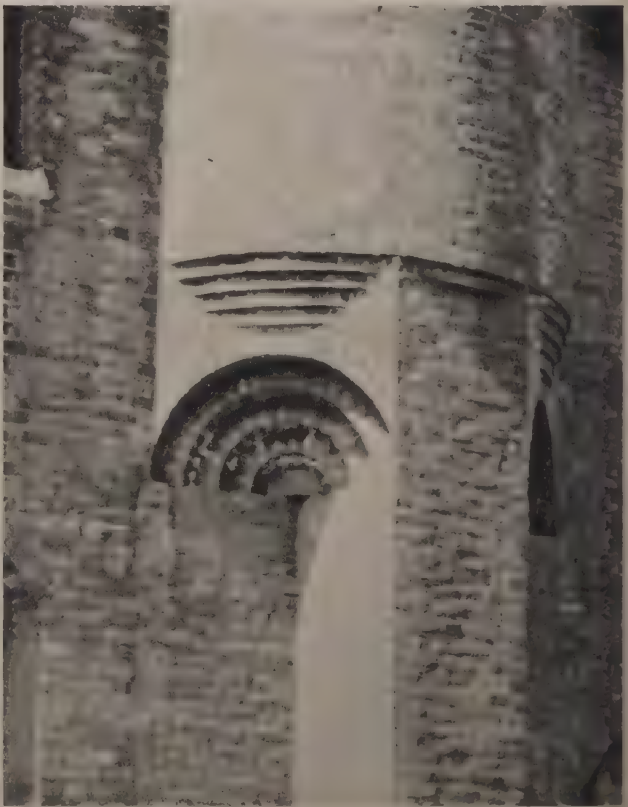


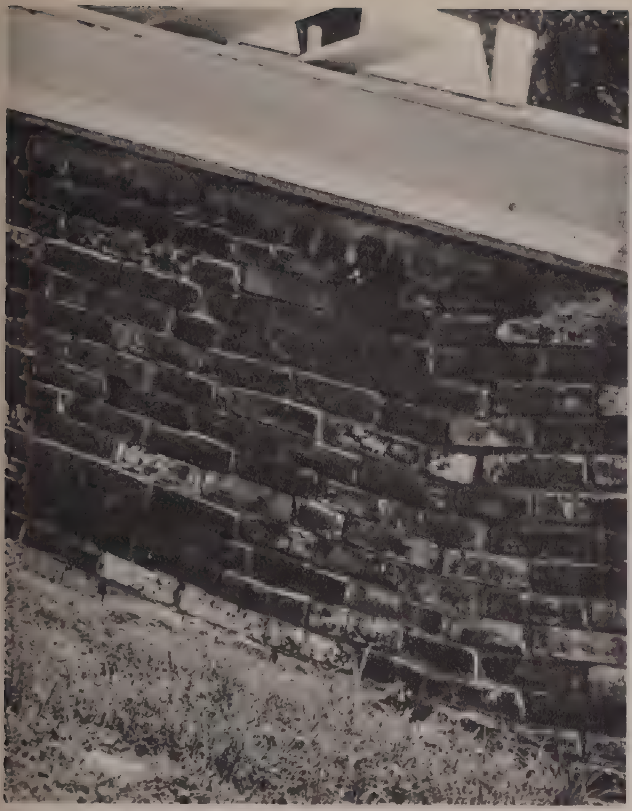
Vouvray,
France

Corbelled corner,
Potton, England

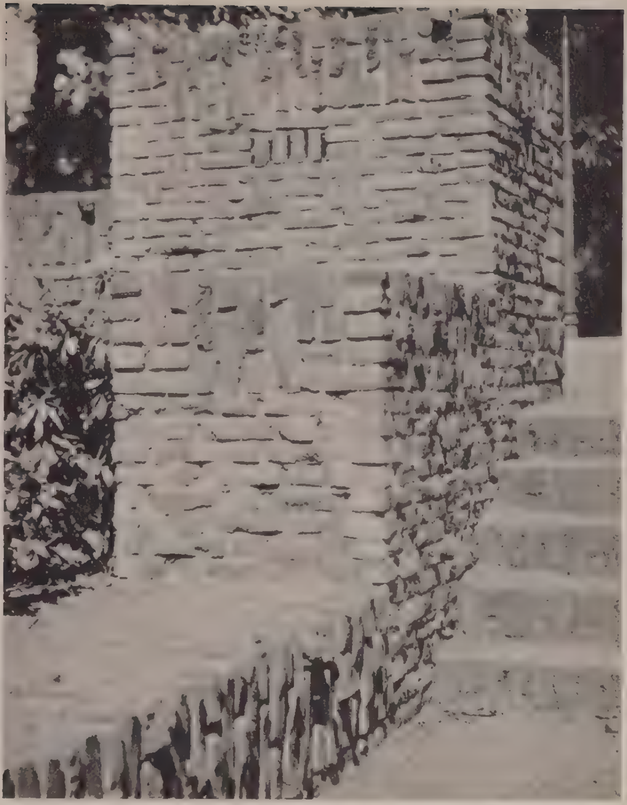


Corbelled turret,
Binnenhof, The Hague



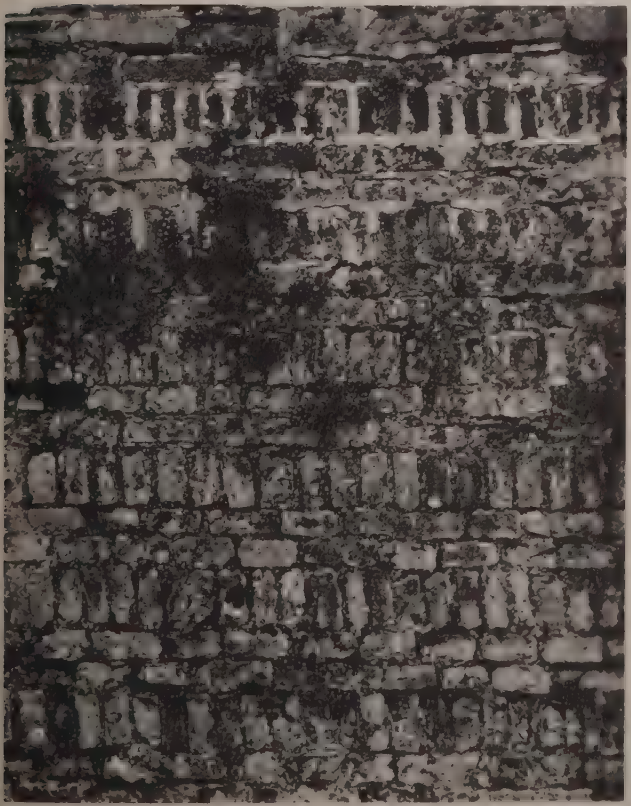


Greenhouse wall (1800) following slope of the land
Waltham, Mass.

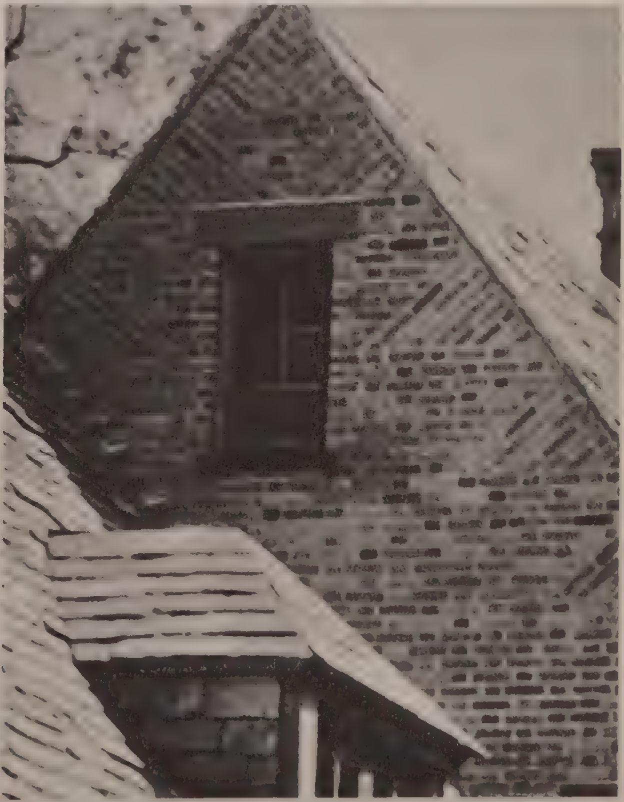


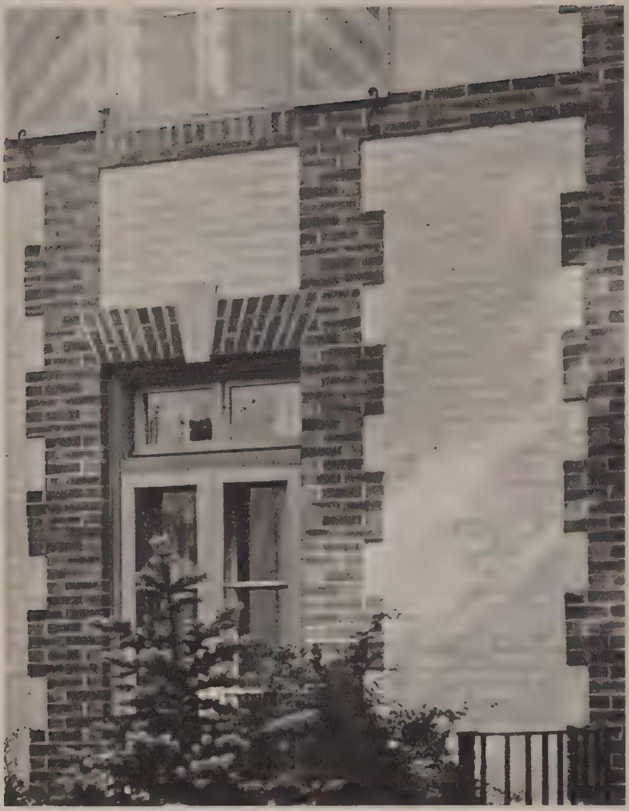
Garden wall,
Utrecht, Holland

Garden wall,
Lavenham, England

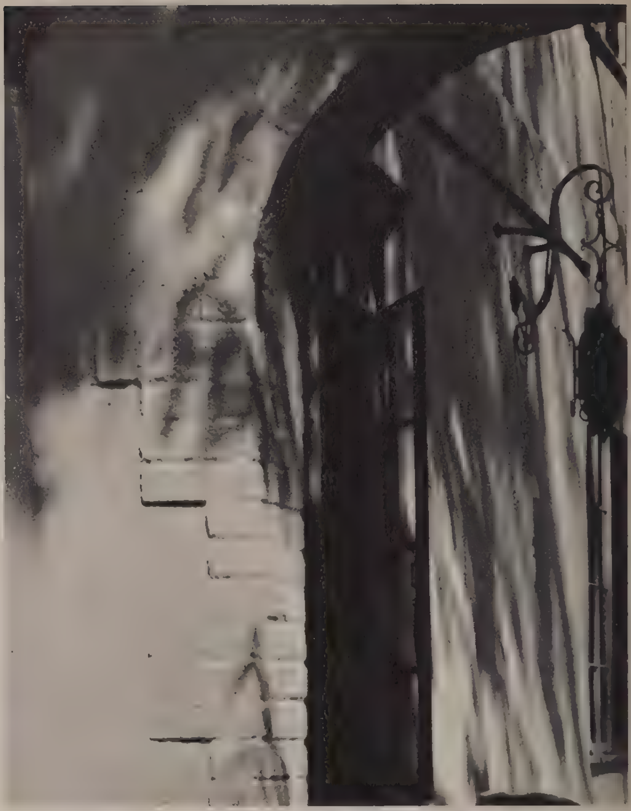


Gardner House, Dayton, Ohio
Peabody, Wilson & Brown



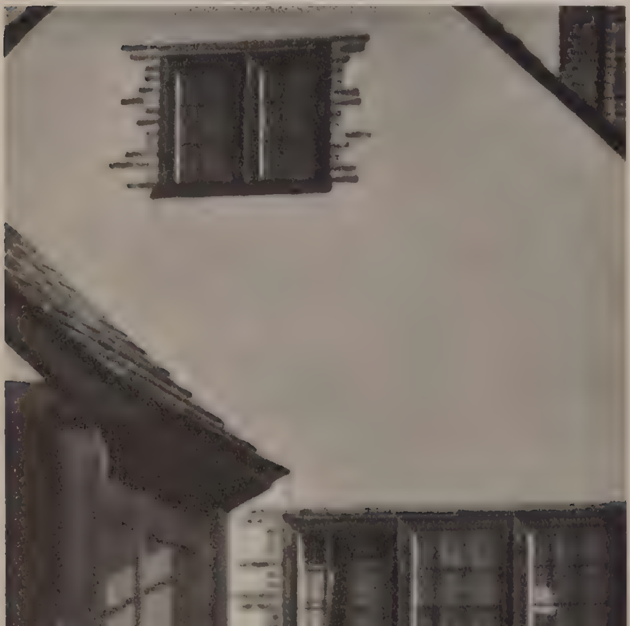


Oliver House, Winnetka, Ill.
Huszagh & Hill

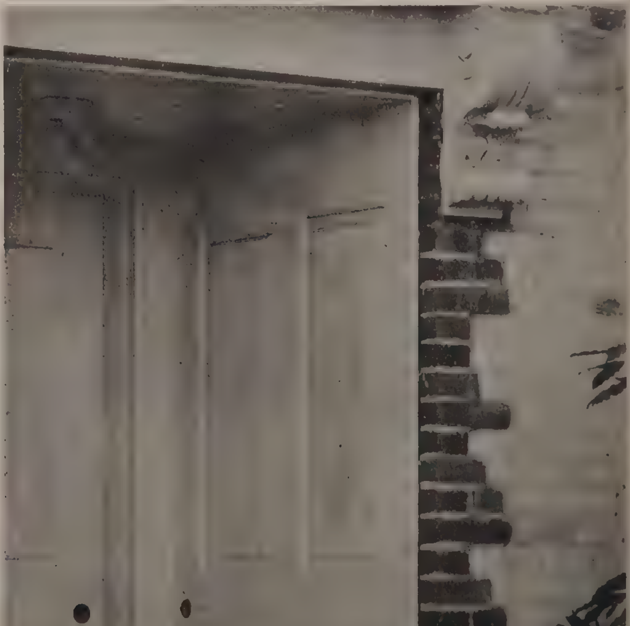


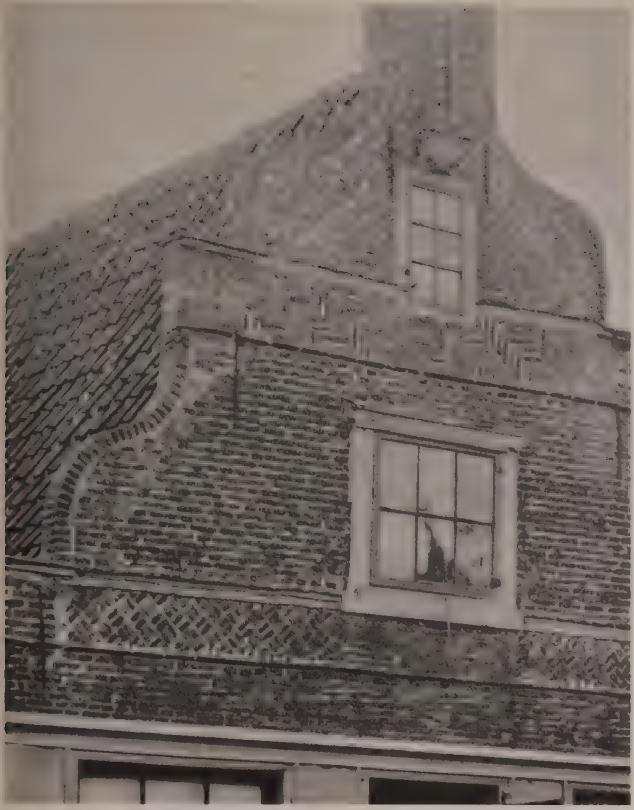
Skim coat of stucco over brick quoins
Henry H. Saylor

House at Locust Valley, N. Y.
Roger H. Bullard

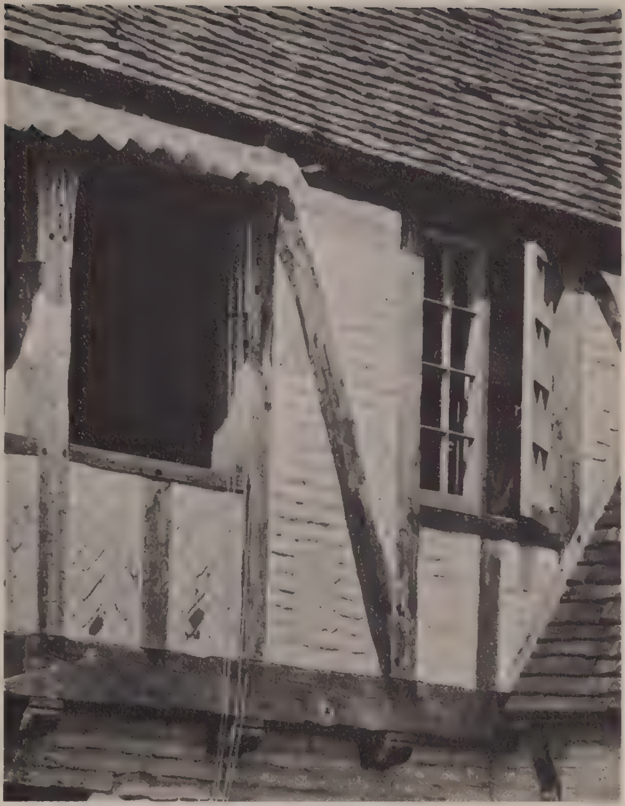


Holdeman House, Beverly Hills, Calif.
Marston, Van Pelt & Maybury



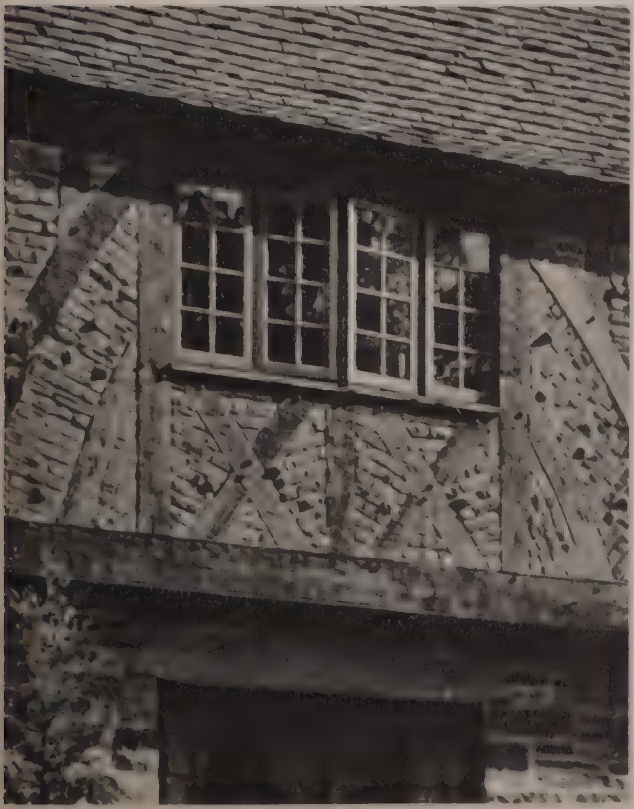


A gable end at Edam,
Holland

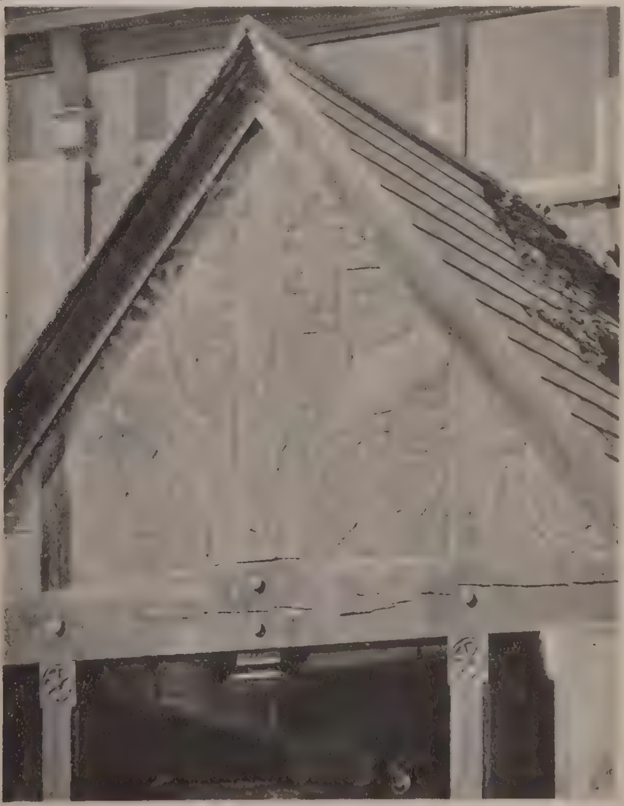


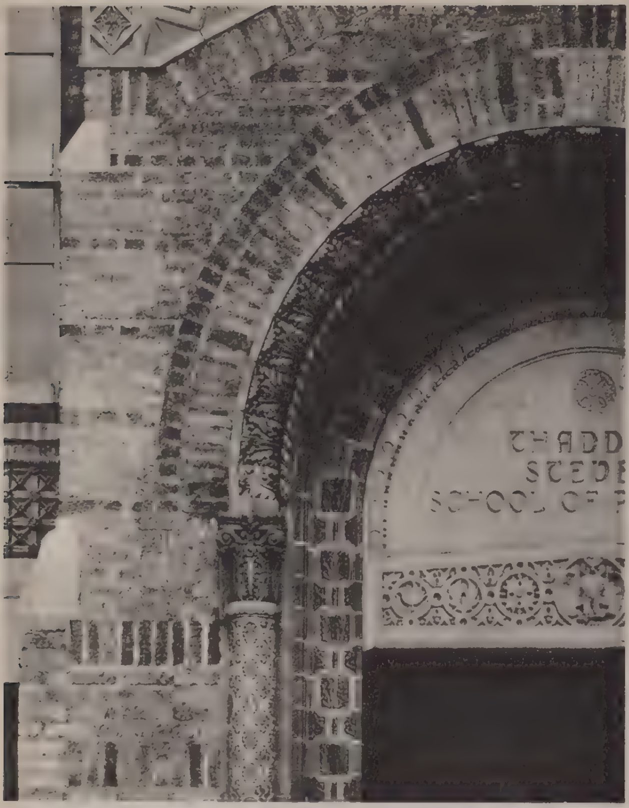
Stable and garage, Greenwich, Conn.
Greville Rickard

Bass House, Greenwich, Conn.
Frank J. Forster; R. A. Gallimore

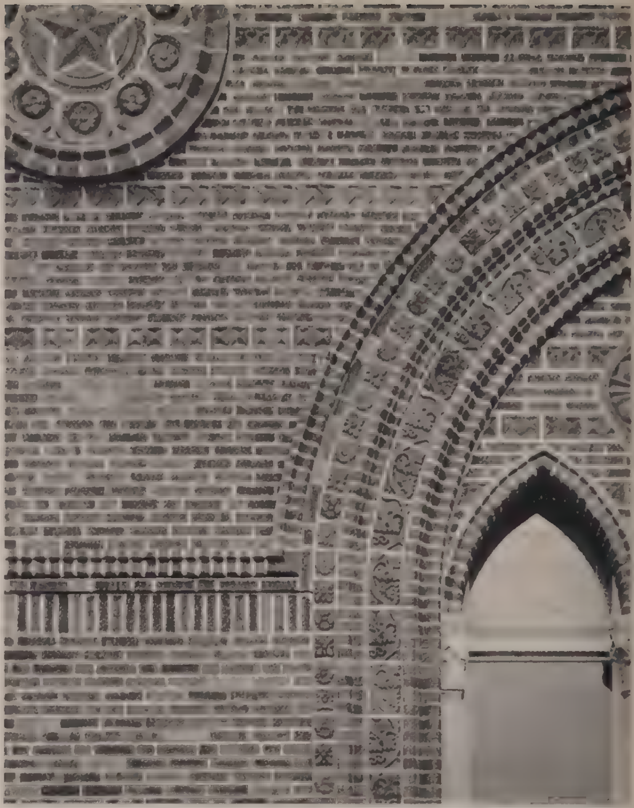


Nicholson House, Bristol, R. I.
Jackson, Robertson & Adams



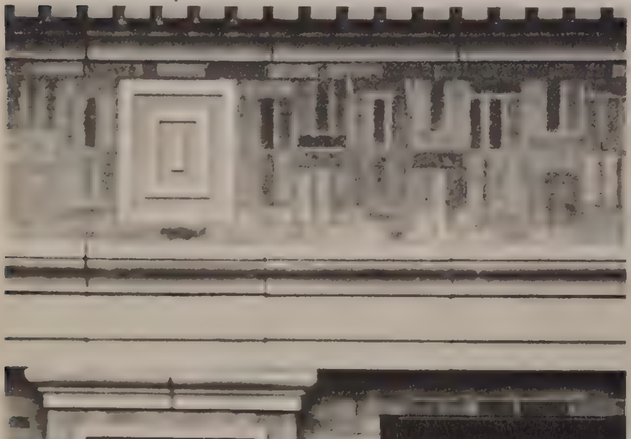


Thaddeus Stevens School of Practice, Philadelphia
Irwin T. Catherine

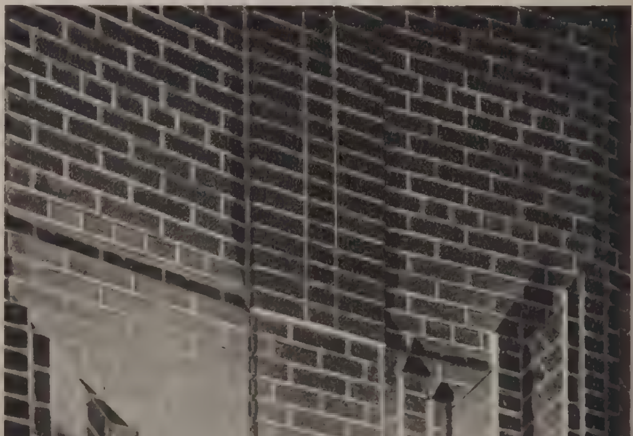


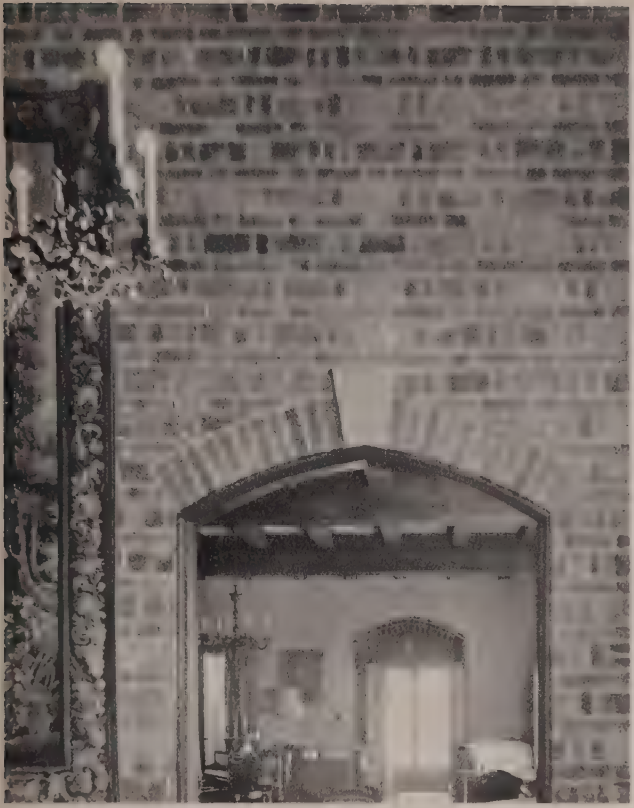
Post Office, Easton, Pa.
Hopkins & Dentz

Agricultural Extensible Building, Washington, D. C.
Supervising Architect's Office

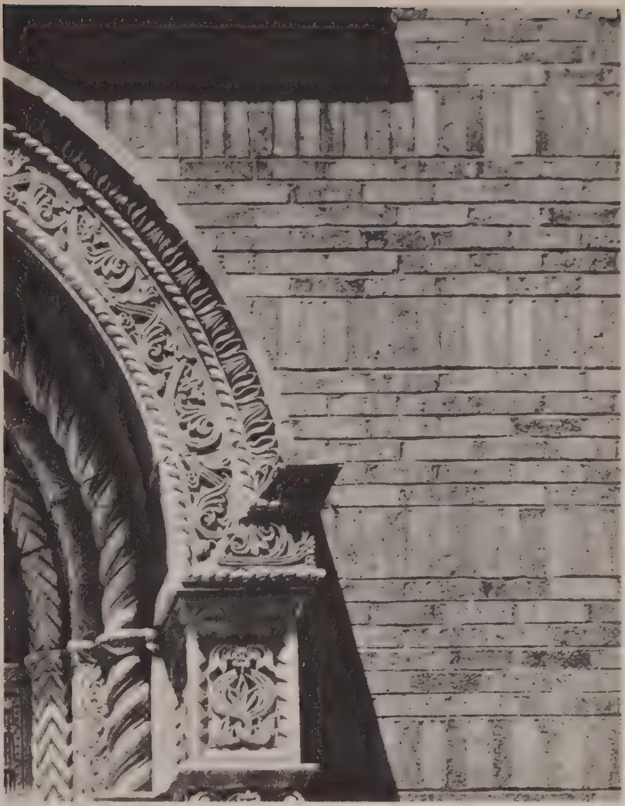


Western Union Building, New York City
Voorhees, Gmelin & Walker



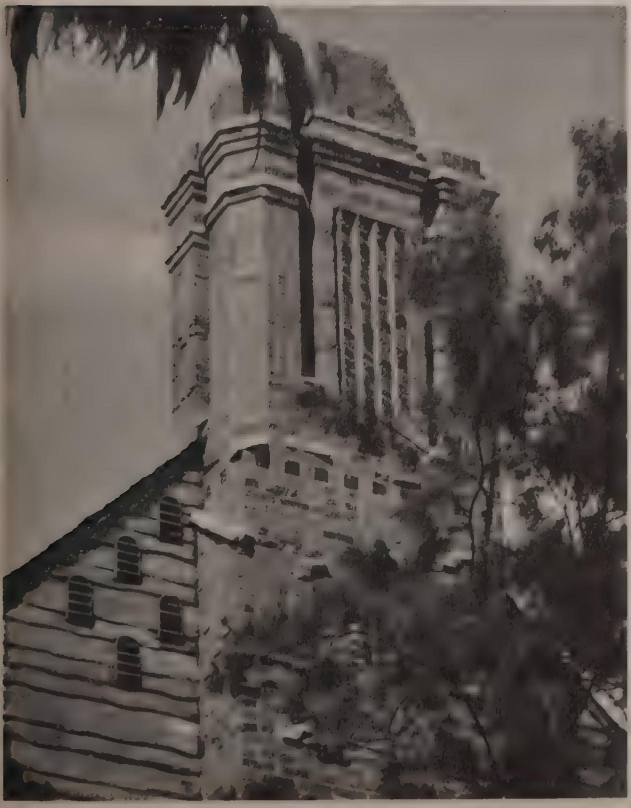


Gano House, Denver, Colo.
W. E. & A. A. Fisher

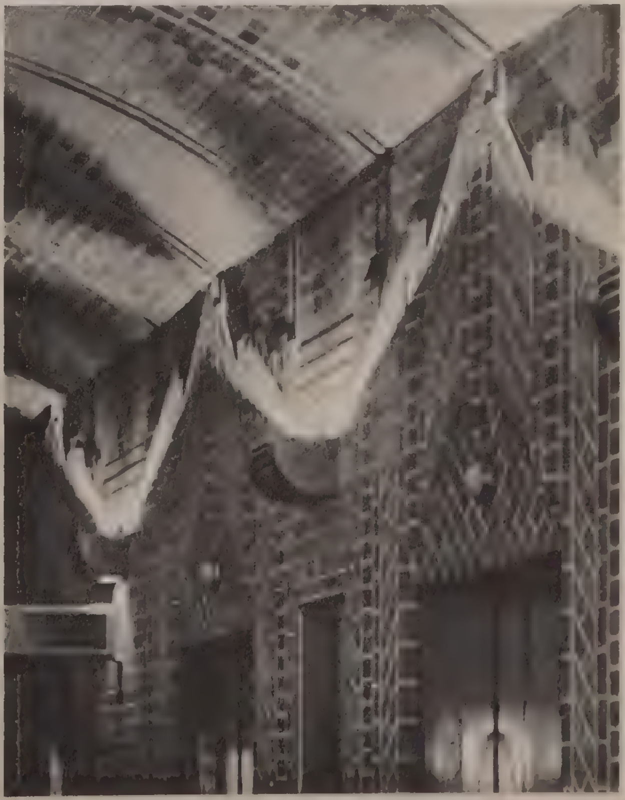


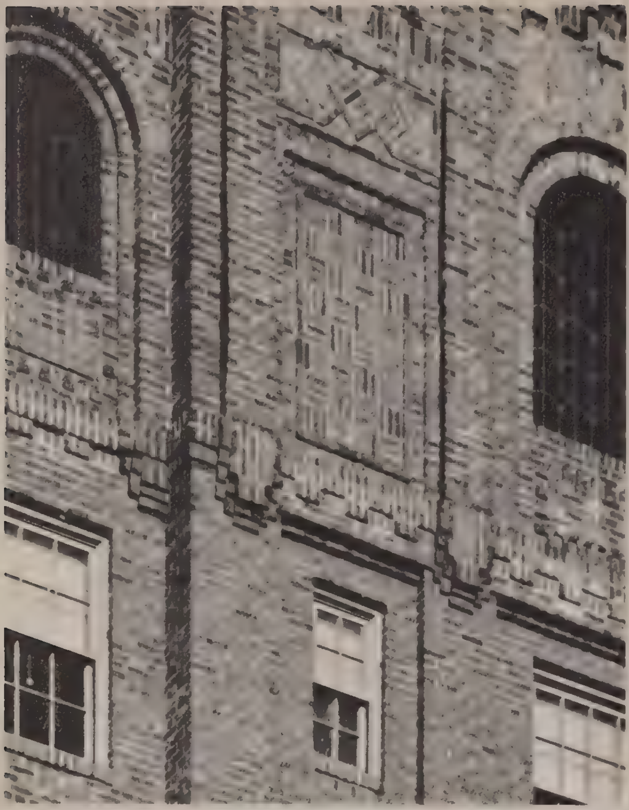
Telephone Building, Tiffin, Ohio
Mills, Rhines, Bellman & Nordhoff

A chimney at Hollywood, Calif.
L. G. Scherer

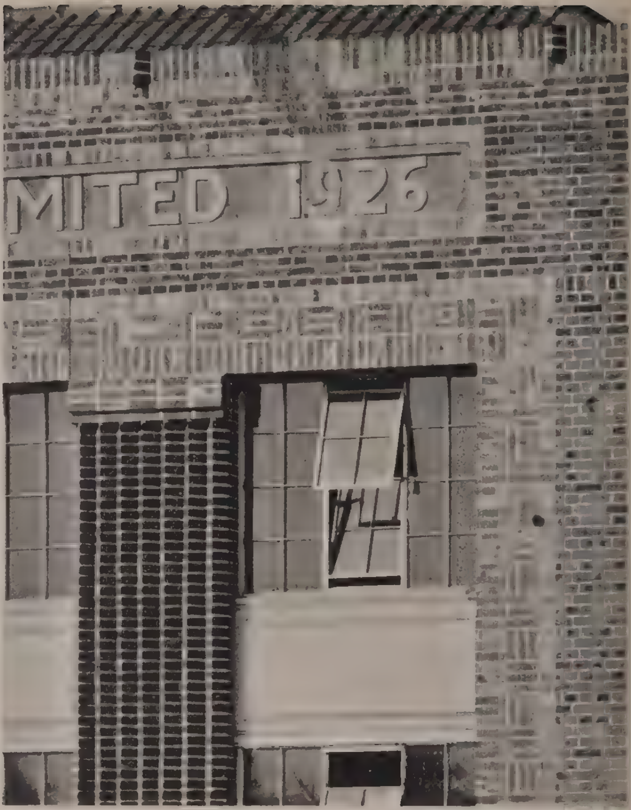


Western Union Building, New York City
Voorhees, Gmelin & Walker



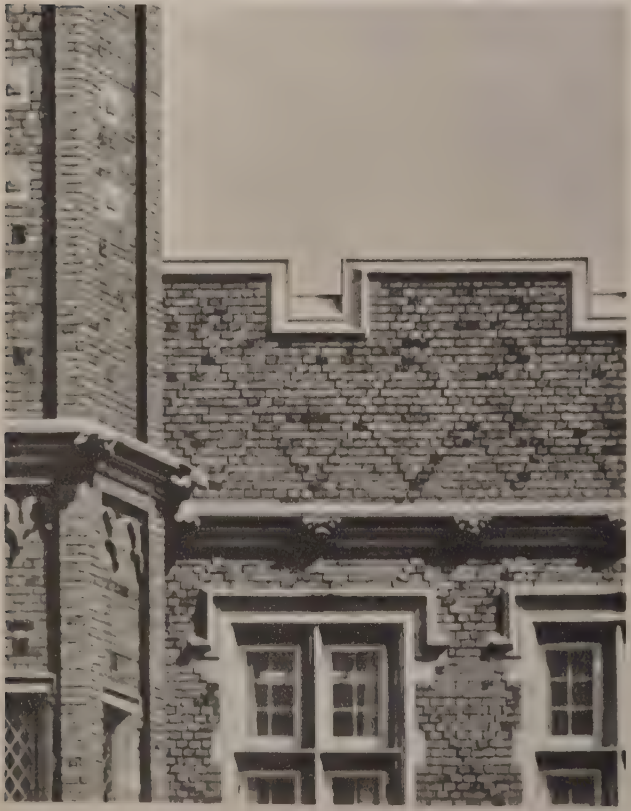


Phipps Garden Apartments, Sunnyside, N. Y.
Clarence S. Stein

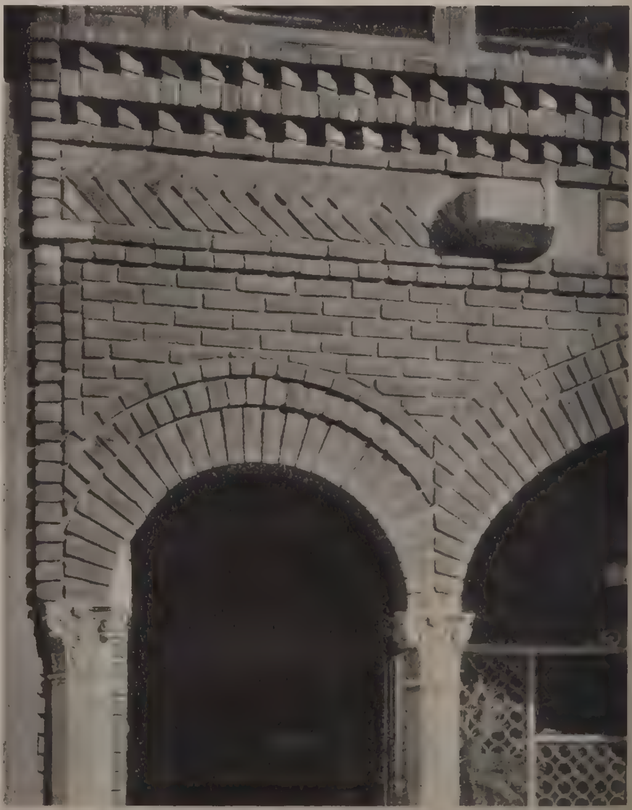


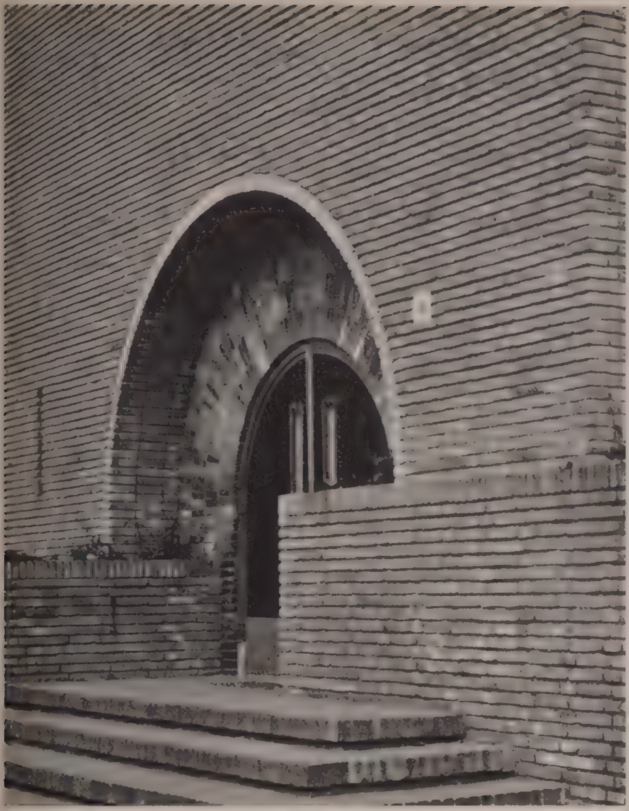
Abbey Bakeries,
Leicester, England

High School, Teaneck, N. J.
Hacker & Hacker

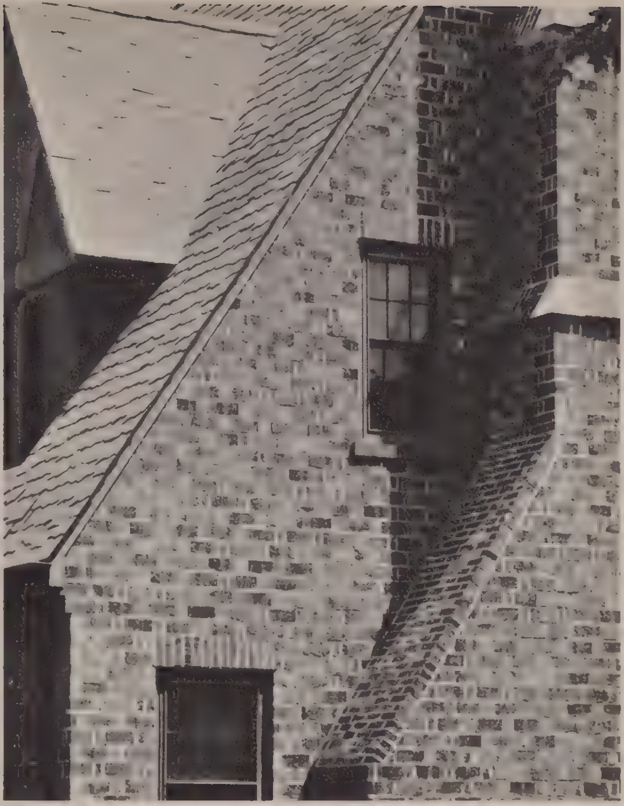


Store front, New York City
Hughes & Hughes



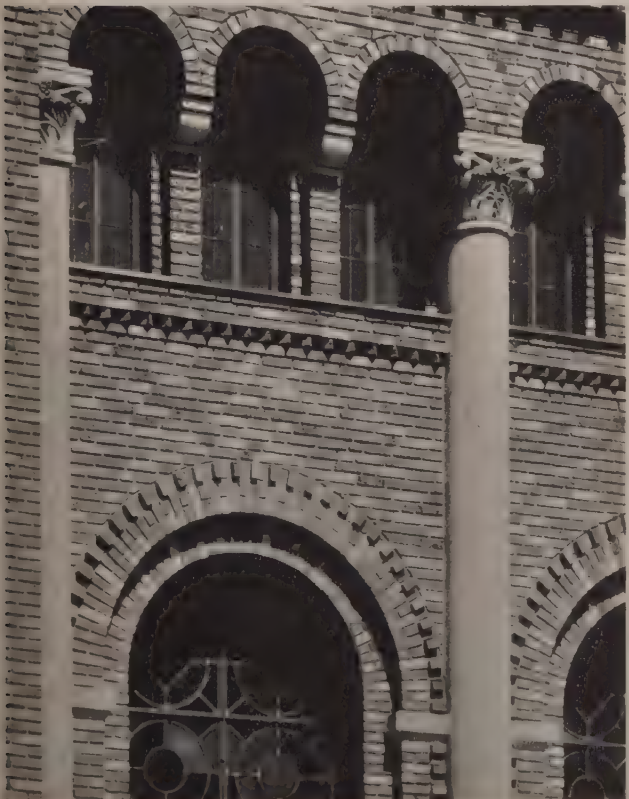


School at Hilversum, Holland
W. M. Dudok

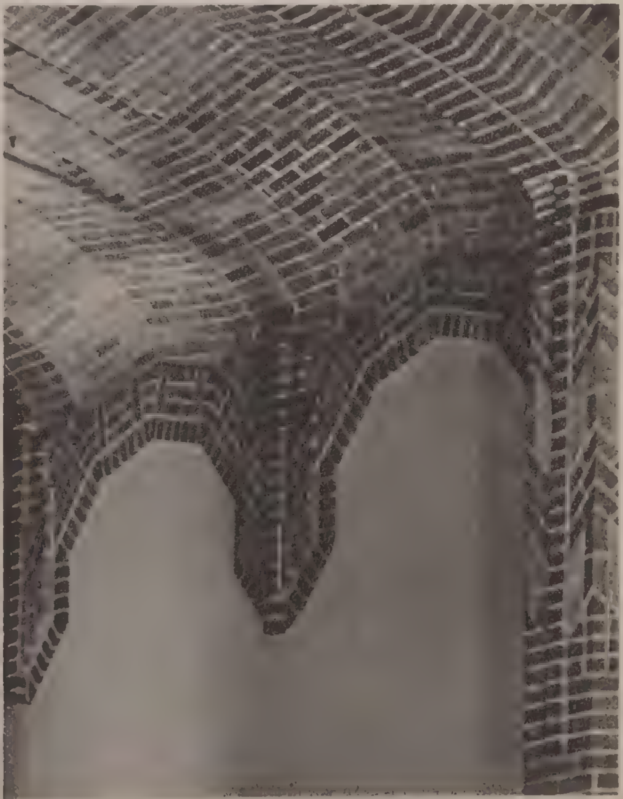


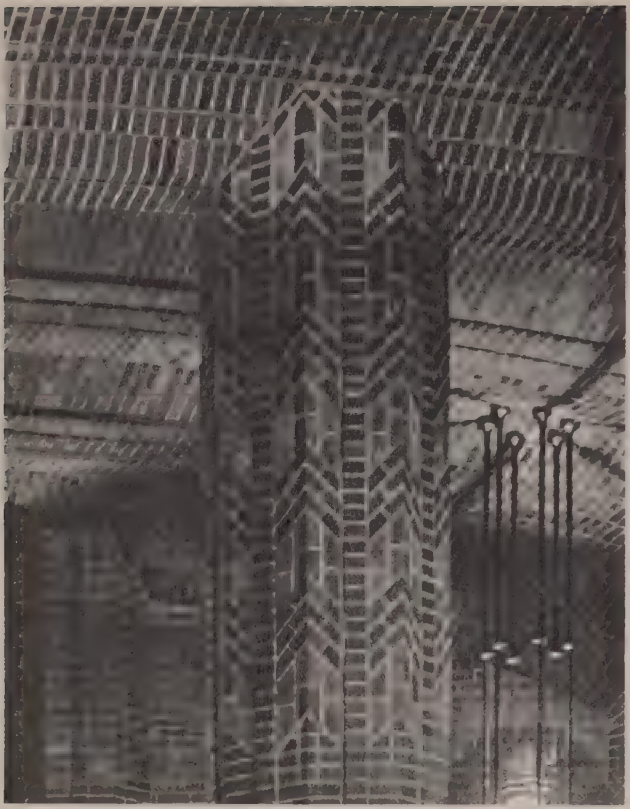
House at Garden City, N. Y.
Harry Grattan

Hellenic Eastern Orthodox Cathedral, New York City
Kerr Rainsford; Thompson, Holmes & Converse



Western Union Building, New York City
Voorhees, Gmelin & Walker





Western Union Building, New York City
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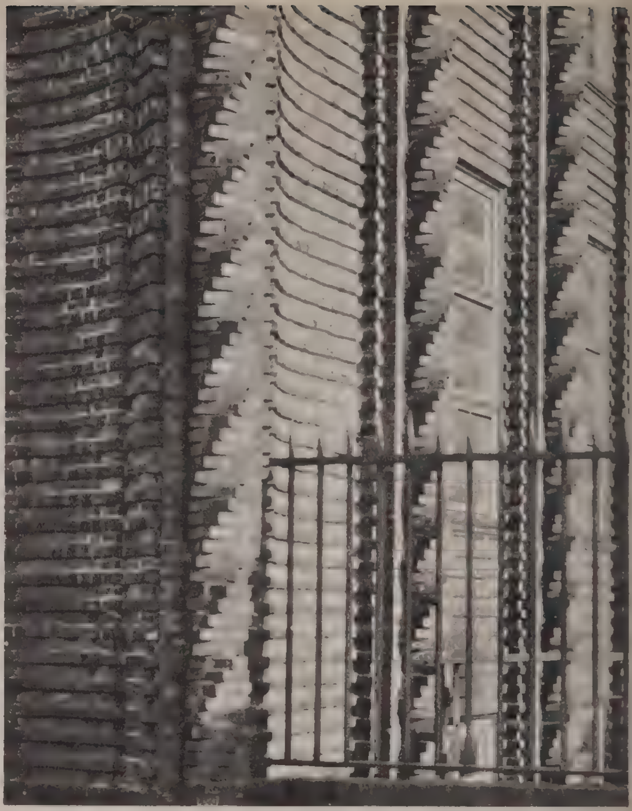
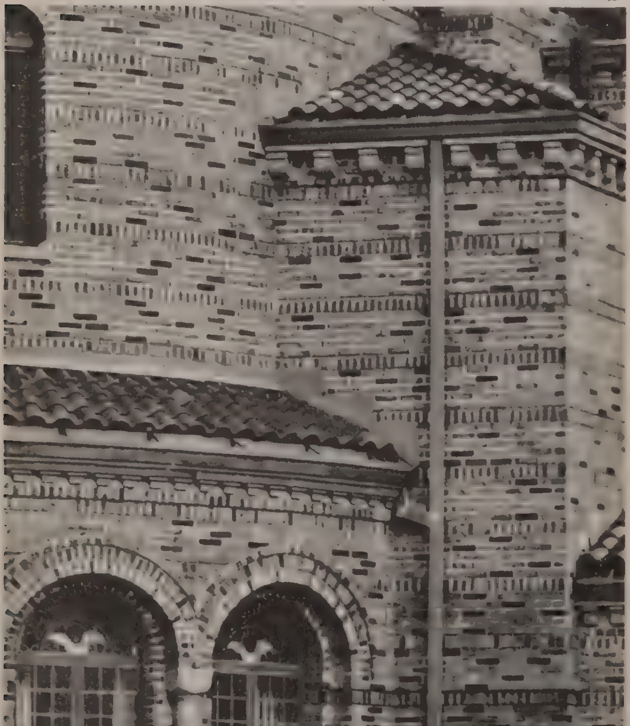
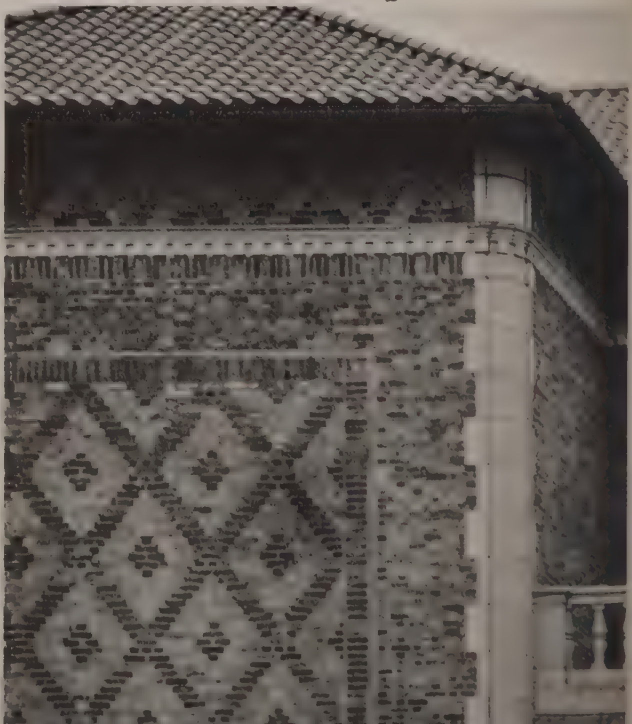


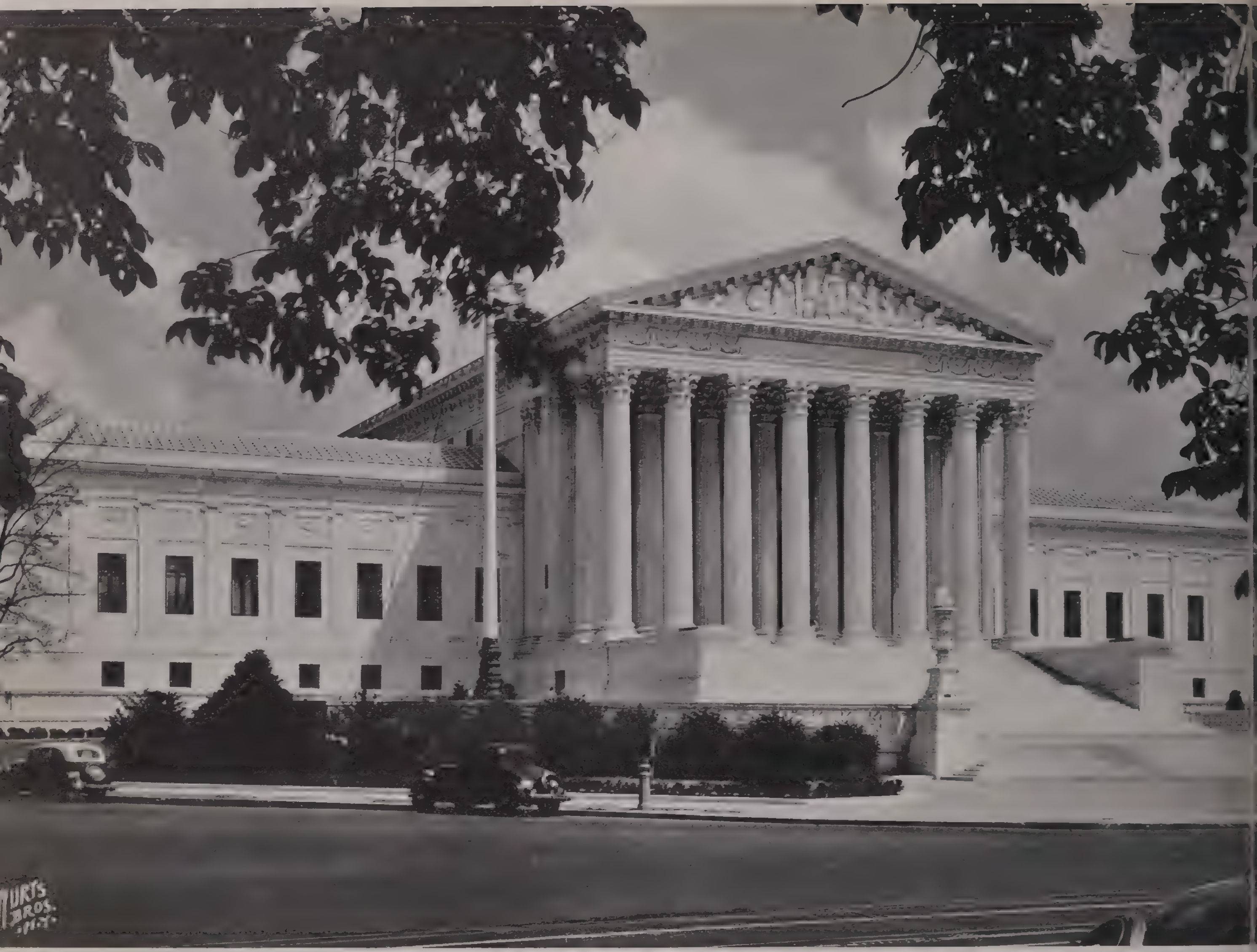
A factory, Hamburg, Germany
Fritz Höger

Nazareth Hall, Grand Rapids, Mich.
Mills, Rhines, Bellman & Nordhoff



Parochial School, Toledo, Ohio
Mills, Rhines, Bellman & Nordhoff





UNITED STATES SUPREME COURT BUILDING

The west front from Maryland Avenue.
Sculpture in the pediment, by Robert Aitken

ARCHITECTURE
Volume LXXII Number 6
DECEMBER, 1935

The UNITED STATES SUPREME COURT BUILDING

By Cass Gilbert, Jr.

To attempt to describe the beauty of the new Supreme Court Building in Washington, D. C., would require the experience and knowledge of a master writer, just as the production of the building required the experience and ability of a master designer. Only through illustrations can the beauty be depicted.

In 1928, an Act was passed by Congress providing for a Supreme Court Building Commission. The late Chief Justice William Howard Taft was the first chairman, and upon his death he was succeeded by the present Chief Justice, Charles Evans Hughes. The other members of the Commission are Associate Justice Willis Van Devanter, Senator Henry W. Keyes, former Senator James A. Reed, Richard N. Elliott, former Chairman of the House Committee on Public Buildings and Grounds, now Assistant to the Comptroller-General, Fritz G. Lanham, Chairman of the House Committee on Public Buildings and Grounds, and David Lynn, Architect of the Capitol, who is Executive Officer of the Commission.

The first contract awarded by the Commission was for the design, which included a model to be made in plaster to show what the building would look like. This contract was awarded to Cass Gilbert.

There were many discussions, during the course of making the designs, regarding the location, and the site finally selected is somewhat triangular in shape bounded by First Street, N.E., on the west side, Maryland Avenue on the north side, Second Street, N.E., on the west, and East Capitol Street on the south. The main axis of the building is located on the continuation of the east-west axis of the pediment of the Senate Wing of the National Capitol.

After the type and style of the building had been determined and the site had been selected, a subsequent contract was made by the Supreme Court Building Commission for architectural services, which was signed by Cass Gilbert, Cass Gilbert, Jr., and John R. Rockart. Work was started in 1931, and the building is now virtually completed. On October 7 the United States Supreme Court held its first session in its new home.

As yet the site lacks trees and other planting to give the building its proper setting, but landscaping plans in contemplation give promise that this lack will be remedied.

In the structure itself, Mr. Gilbert developed an adaptation of the Greek classic, with an impressive approach to the building from the west. A short flight of steps, between white marble candelabra, leads to a broad terrace upon which are two monumental flagpoles with sculptured bronze bases.

Dominating the west façade and framing the main entrance facing the Capitol is a double row of sixteen white marble Corinthian columns supporting a sculptured pediment.

Inside this west entrance one enters the Main Hall, monumental in its proportions, lined on both sides with white marble columns against white marble walls. It leads directly east on the main axis through an entrance vestibule to the massive doors opening into the Supreme Court Chamber. The location of the Chamber itself, in the very heart of the structure, symbolizes the importance of the room in which the Court presides. Contrasted with the old Court Room in the Capitol, the new chamber has 60 per cent more floor area with seating for 238 spectators —about 10 per cent more than in the former quarters. The Chamber, which is 82 by 91 feet from wall to wall, and 44 feet high, is dominated by the Bench at the east end facing the entrance, and by twenty-four Ionic columns—four flanking the entrance to the room, four directly behind the Bench, and two rows of four columns each on either side. Although the Court Room is nearly in the center of the building, it lacks no sense of openness and light, for the side colonnades open upon courtyards.

Just in front of the Court Room a transverse corridor divides the building from north to south. On the west, the building is devoted to offices to which the public may have constant access. On the east, the building is given over to the Court Room itself and to offices and conference rooms of the Justices, to which portion of the building the public is not admitted except on specific business. On the first floor these suites of offices for the Justices surround the east half of the Court Room. In the center, immediately in the rear of the Supreme Court Room, is the suite of offices occupied by the Chief Justice, together with a conference room in which the members of the Court meet for their private deliberations. Each Justice has a suite of three rooms, one of which is his private office, a room approximately 20 feet square, with walls finished in American oak from floor to ceiling and with a wood-burning fireplace at one end. Another room of the suite is for the secretary to the Justice, and the third room is for his law clerk. There is a toilet, lavatory, and shower for each suite.

In addition to the conference room of the Court, which adjoins the suite of the Chief Justice, there are two other large conference rooms in proximity to the Justices' suites, but for the present these will probably be seldom used. These rooms are designed for international conferences or arbitrations.

⁂

One particularly interesting feature of the plan lies in the fact that the Justices are assured of complete privacy, not only in the building, but upon their arrival and departure. Their automobiles proceed directly down a ramp into the basement and are there parked, while the Justices ascend in private elevators to a corridor closed to the public, connecting all the suites and the Court Room itself. Their dining-room is on the second floor.

The building has the traditional classic mass of a comparatively low building, yet there are four floors and a basement. On the first floor, reached by the monumental approach from the west, there is the Court Chamber, the Justices' suites, offices for the Attorney-General and Solicitor-General when they come to court, conference rooms, a robing room, rooms for the Clerk, the Marshal, and rooms for various other purposes.

⁂

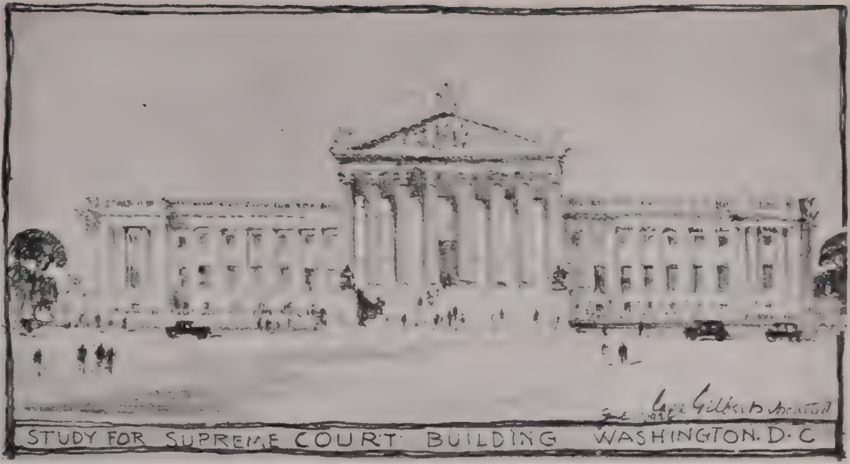
On the second floor the law library is housed, with its stack and document rooms, the librarian's offices, dining-room, court reporters' offices, conference and reading-rooms for members of the bar. For the first time, the library of the Court is brought together under one roof. Hitherto the many volumes that comprise it have been scattered over Washington. Some of them have been in the basement of the Capitol, some in the Office Building of the House of Representatives, and some in the Congressional Library. Incidentally, there is provided an underground passage leading to the Congressional Library, together with pneumatic tube service, providing quick access to information which the Law Library may not afford.

On the third floor are large reading-rooms, with open shelves, together with further rooms for the use of the Bar, and several conference rooms.

The fourth floor is reserved for future stack rooms.

On the ground floor are the storage and filing rooms, the cafeteria and kitchen, rooms for minor officers and employees of the Court, and space for the press.

For the first time, at the insistence of the late Chief Justice Taft, adequate provision for the press is made in the Court Room and below stairs. Directly in front of the Bench there is a space for as many as six press association members. Each correspondent has a chair and a table, to which latter is attached a pneumatic tube leading to a space reserved for the press on the ground floor. Obviously, this pneumatic-tube service had to be specially designed for absolute noiselessness and, incidentally, the messages it carries are outgoing only. Correspondents of individual newspapers have provided for them three tables with four chairs each, located be-


STUDY FOR SUPREME COURT BUILDING WASHINGTON. D·C
Cass Gilbert Architect

One of Mr. Gilbert's early sketches for the west front—dated June 11, 1928

tween the columns at one side of the room, and there is similar pneumatic-tube service here. On the ground floor, adjacent to the wire service, are two press rooms, one for correspondents of the press associations, the other for correspondents of individual newspapers. Both are equipped with chairs, tables, lounge furniture, lockers, telephones, and bookcases.

Public buildings usually are profusely inscribed, giving assurances of one kind or another to various constituencies. In the Supreme Court Building there are only two brief inscriptions: one over the main entrance on the west, EQUAL JUSTICE UNDER LAW; and, over the center of the east façade, JUSTICE, THE GUARDIAN OF LIBERTY. Originally an inscription had been contemplated for the Court Room, in accordance with the tradition that similar rooms in great public buildings usually provide for inscriptions upon the walls. None has been written for the Supreme Court Room. The Court speaks for itself.

In accordance with the ruling thought that the home of the Supreme Court must be as enduring as man can build it, the entire exterior is of white Vermont marble, the pieces varying in size from two hundred pounds to sixty-six tons, and averaging nearly a ton apiece. These larger stones appear in the sculptured pediments. In the courtyards Georgia marble has been used.

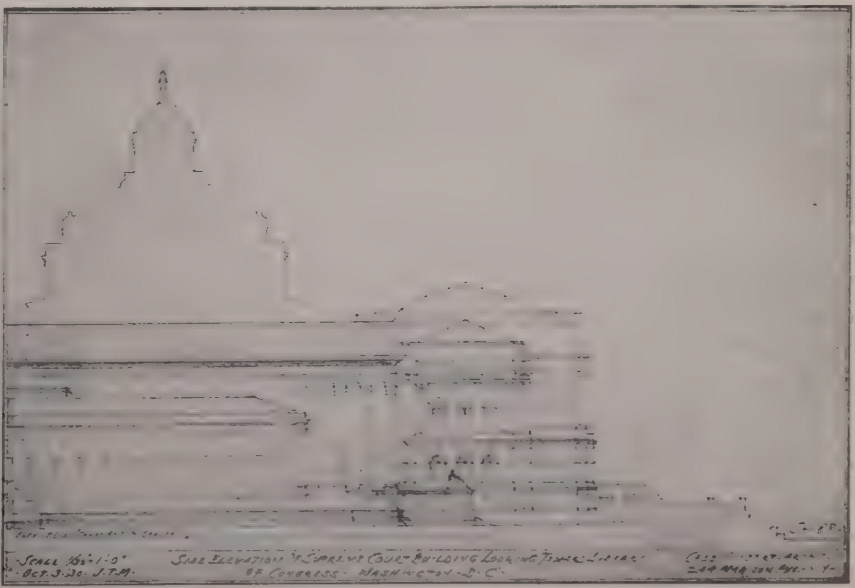
The marble for the interior of the building is from Alabama, with the exception of the marble in the Supreme Court Room itself. Here, because of Mr. Gilbert's desire for a warm color tone, Ivory Veine was used for the walls and frieze, and Old Convent Quarry Siena marble was used for the columns. Mr. Gilbert personally went to the Old Convent Quarry and examined many of the drums for these columns to be sure that only the suitable material might be selected.

In the larger offices the walls are panelled in American white oak, and the floors are of the same material. In fact, all the materials, with the exception of the marble in the Supreme Court Room itself, are American, and even the imported materials were finished in the United States.

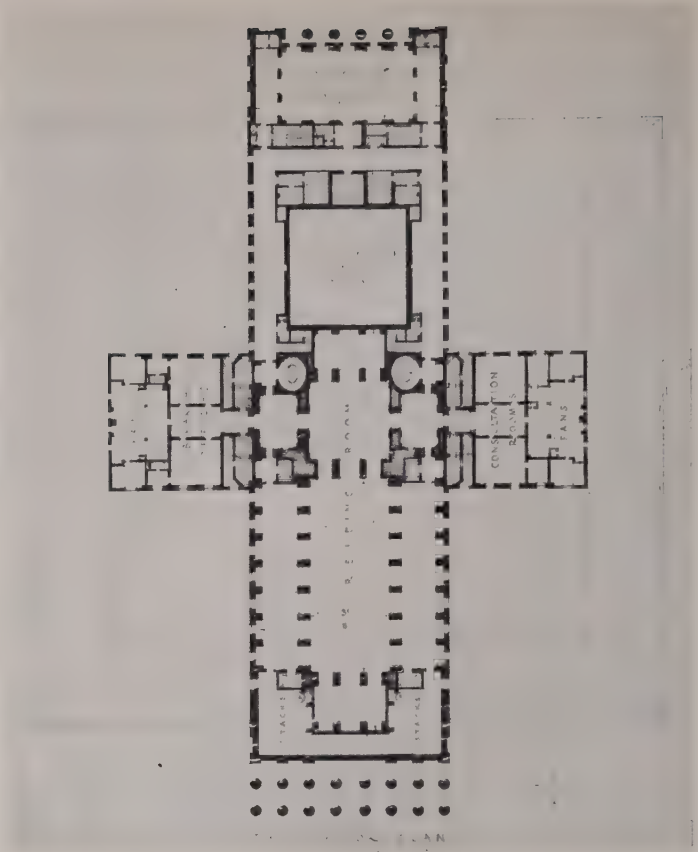
Congress appropriated for the general construction of the building the sum of $9,740,000. Construction cost was approximately $9,000,000. On the authorization of Congress, the furniture and furnishings of the building were bought out of the unexpended balance, and the total cost of the building ready for occupancy was more than $500,000 under the original appropriation for construction alone.

How well Mr. Gilbert interpreted the United States Supreme Court in his design and decoration of its new home was expressed by Chief Justice Hughes to his colleagues on the Building Commission in deploring the death of Mr. Gilbert in 1934: "The country is deeply indebted to Mr. Gilbert for what he has done in the United States Supreme Court Building, the last monumental work of his career. The building will be a lasting memorial to his great ability which has placed him in the front rank of architects not only of this country, but of the world."

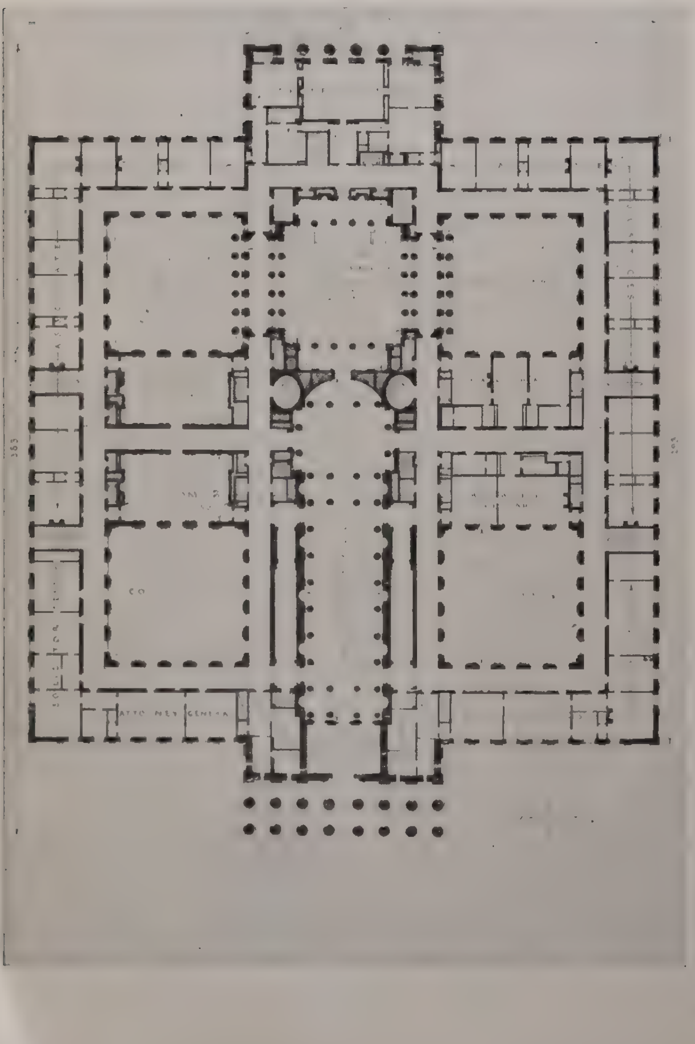
A preliminary study to show the relation between the Supreme Court Building and the Library of Congress to the south


Scale 1/32"=1'-0"
Oct. 3-30. J.T.M.
Side Elevation of Supreme Court Building Looking Toward Library of Congress - Washington D.C.

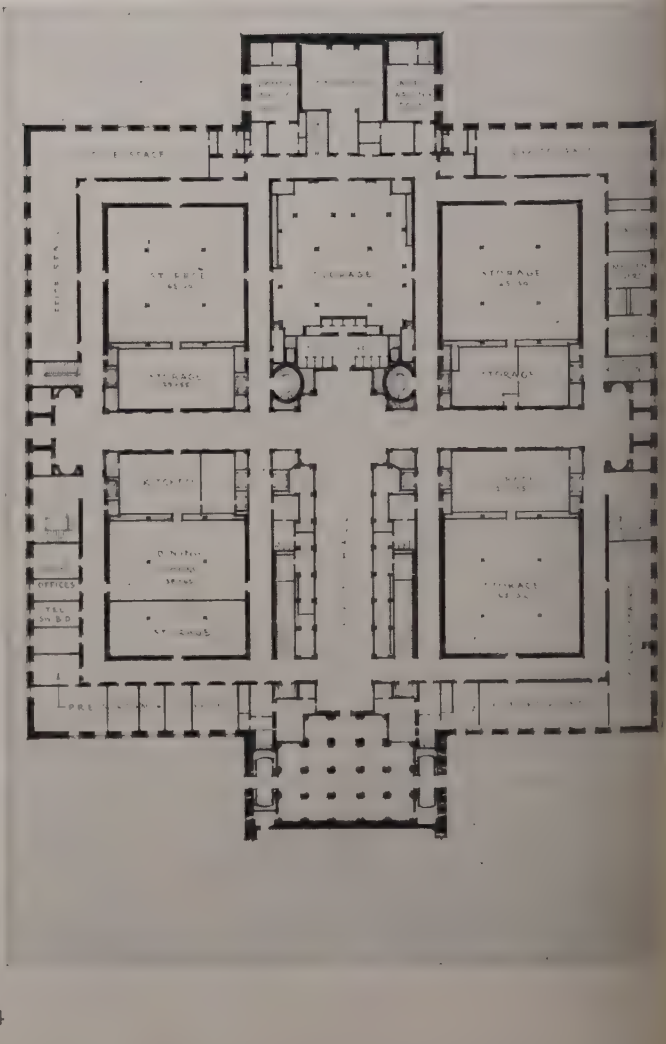
Plan of the third floor, given over largely to the General Reading Room, open to members of the Bar. In the Special Library at the east end a collection bequeathed by Senator Gerry of Rhode Island is housed

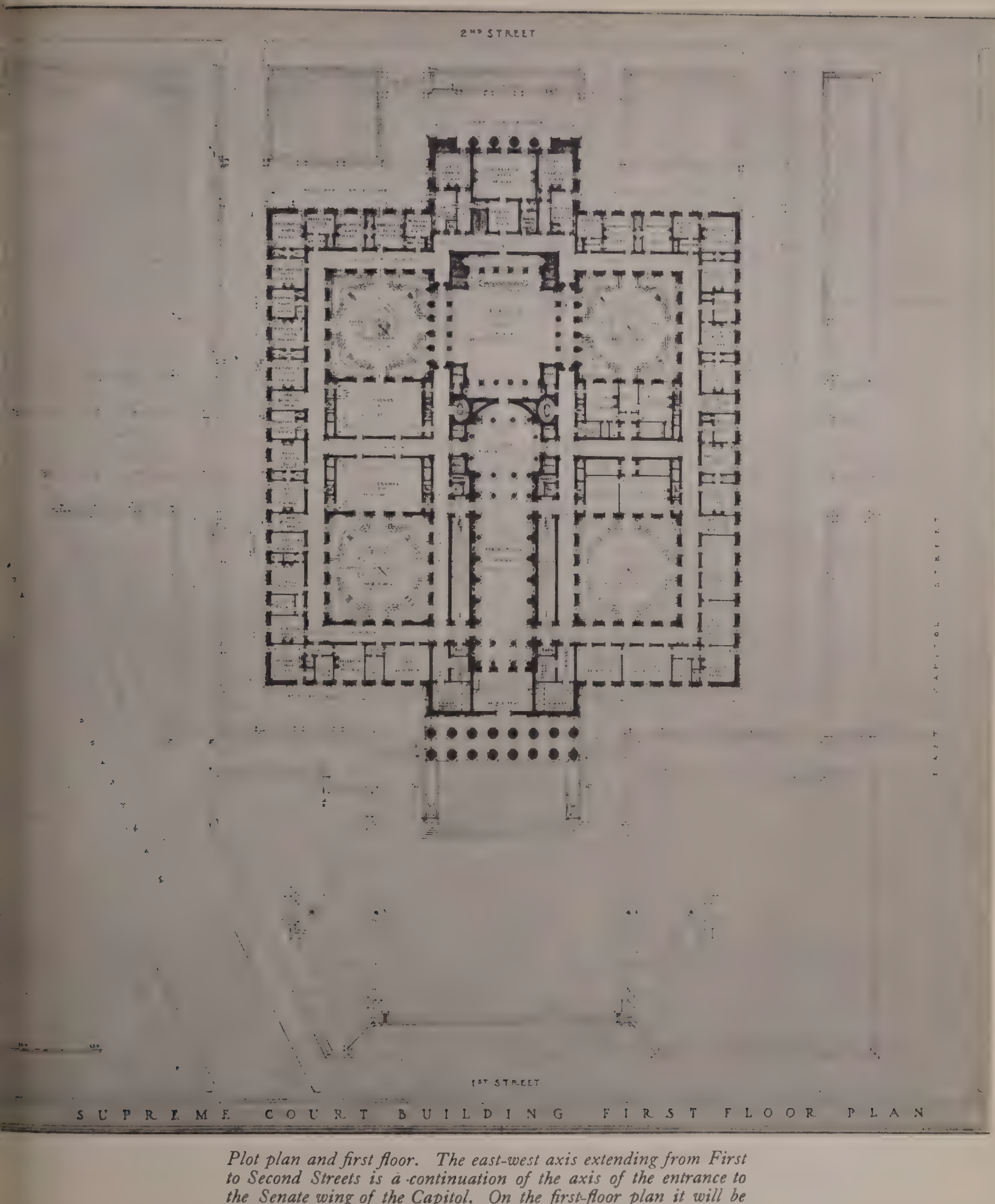


Below, plan of the first floor

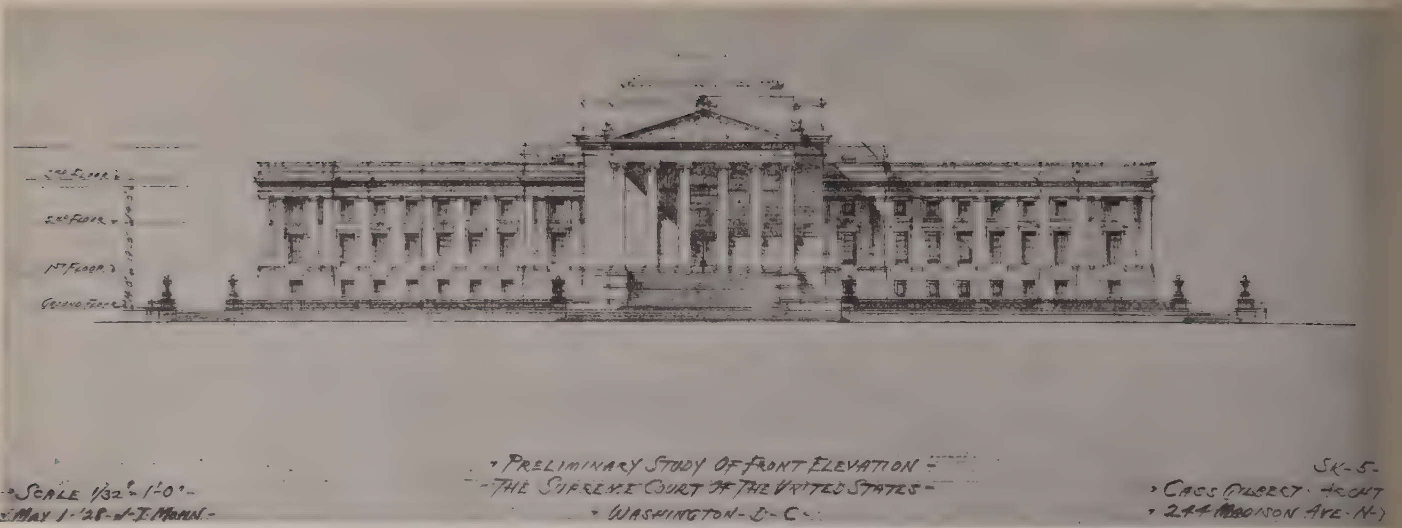


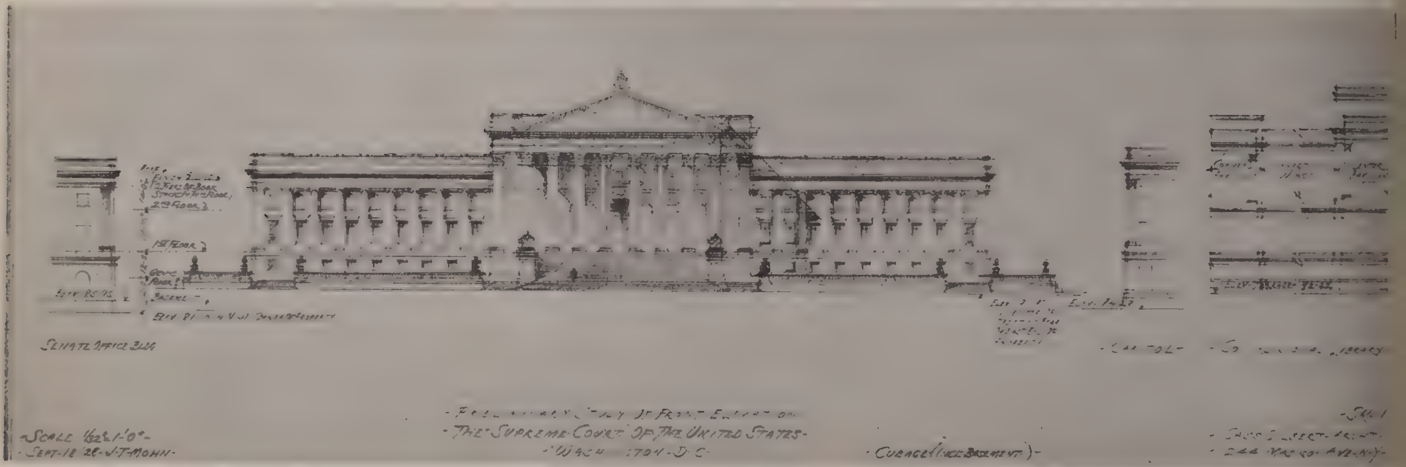
Below, plan of the ground floor

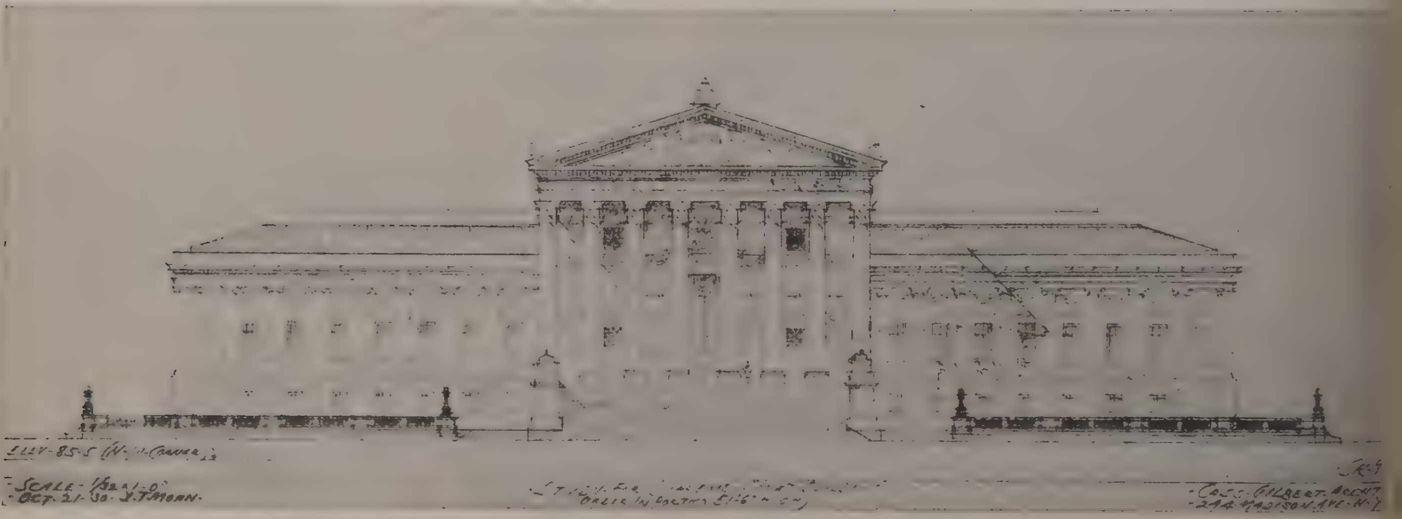




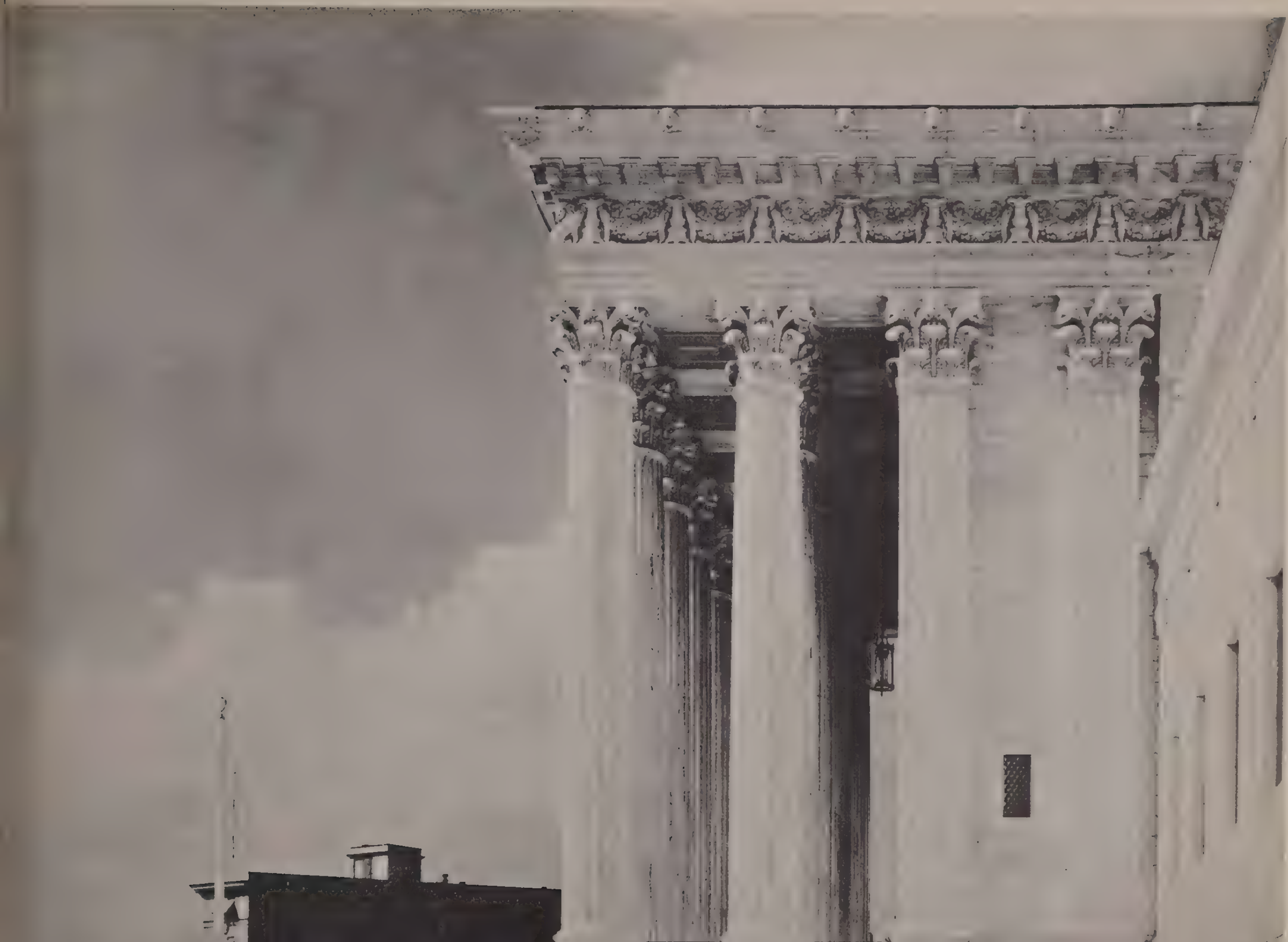
Plot plan and first floor. The east-west axis extending from First to Second Streets is a continuation of the axis of the entrance to the Senate wing of the Capitol. On the first-floor plan it will be noticed that the Supreme Court Room is the heart of the whole composition, flanked on either side by a courtyard and reached from the main entrance on First Street through the impressive Memorial Hall



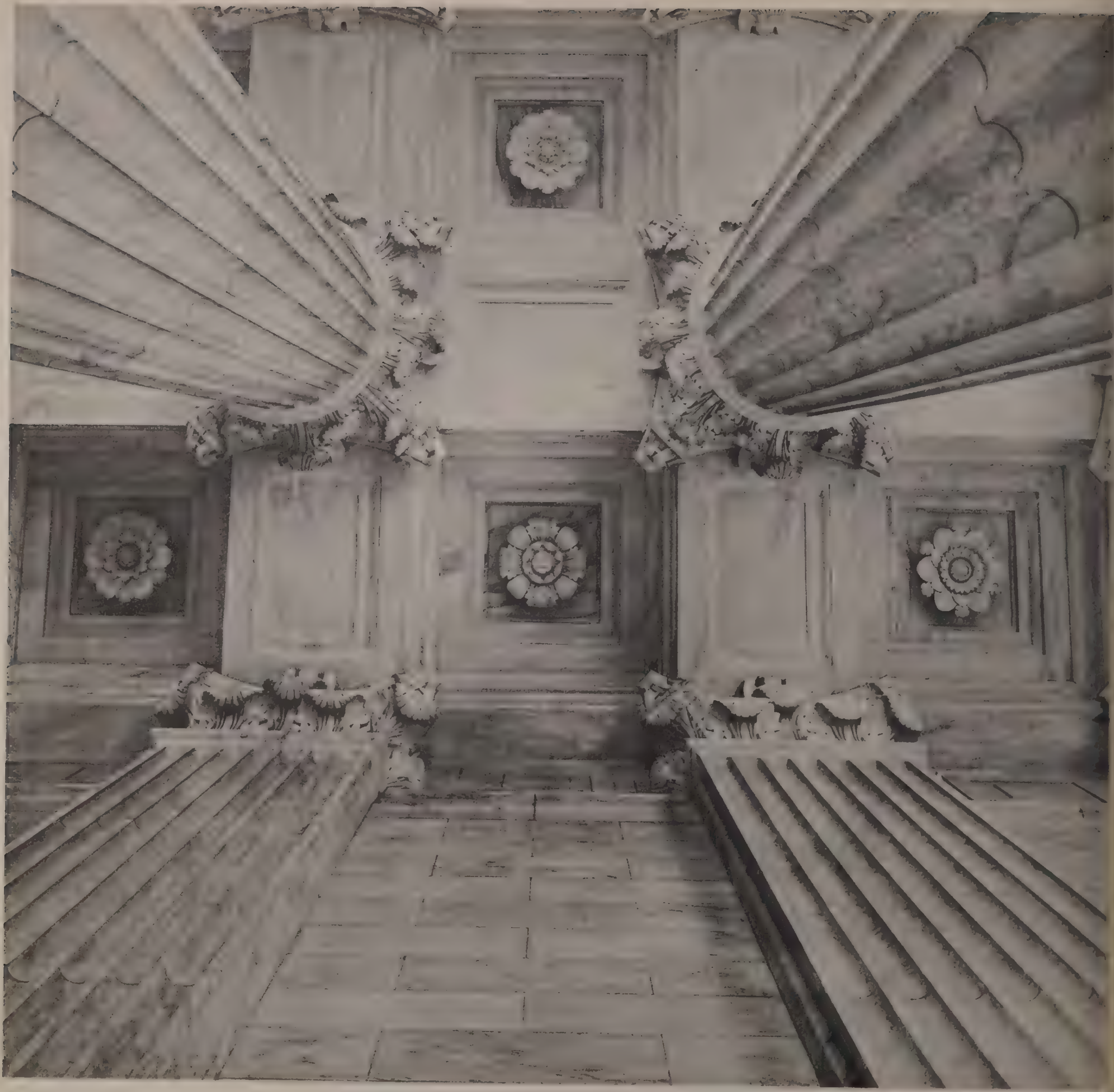




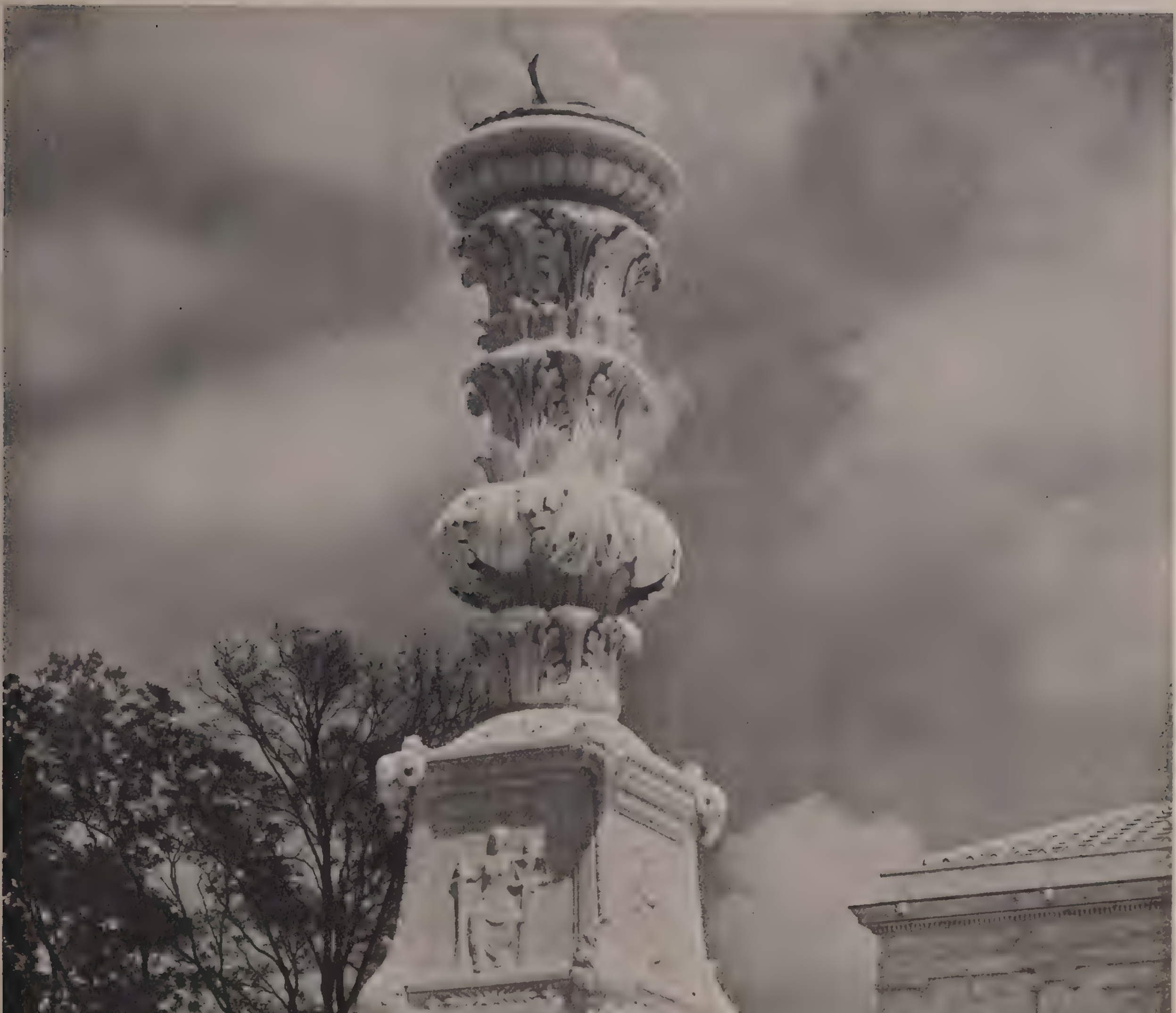
Three from among the many preliminary studies of the front elevation, in pencil on tracing paper. It will be noticed that on the upper one of these there was a flat dome provided in the composition. Each successive step in the study is marked by simplification and by the omission of decorative detail; the acroteria of the pediment, for example, disappeared before the building was erected



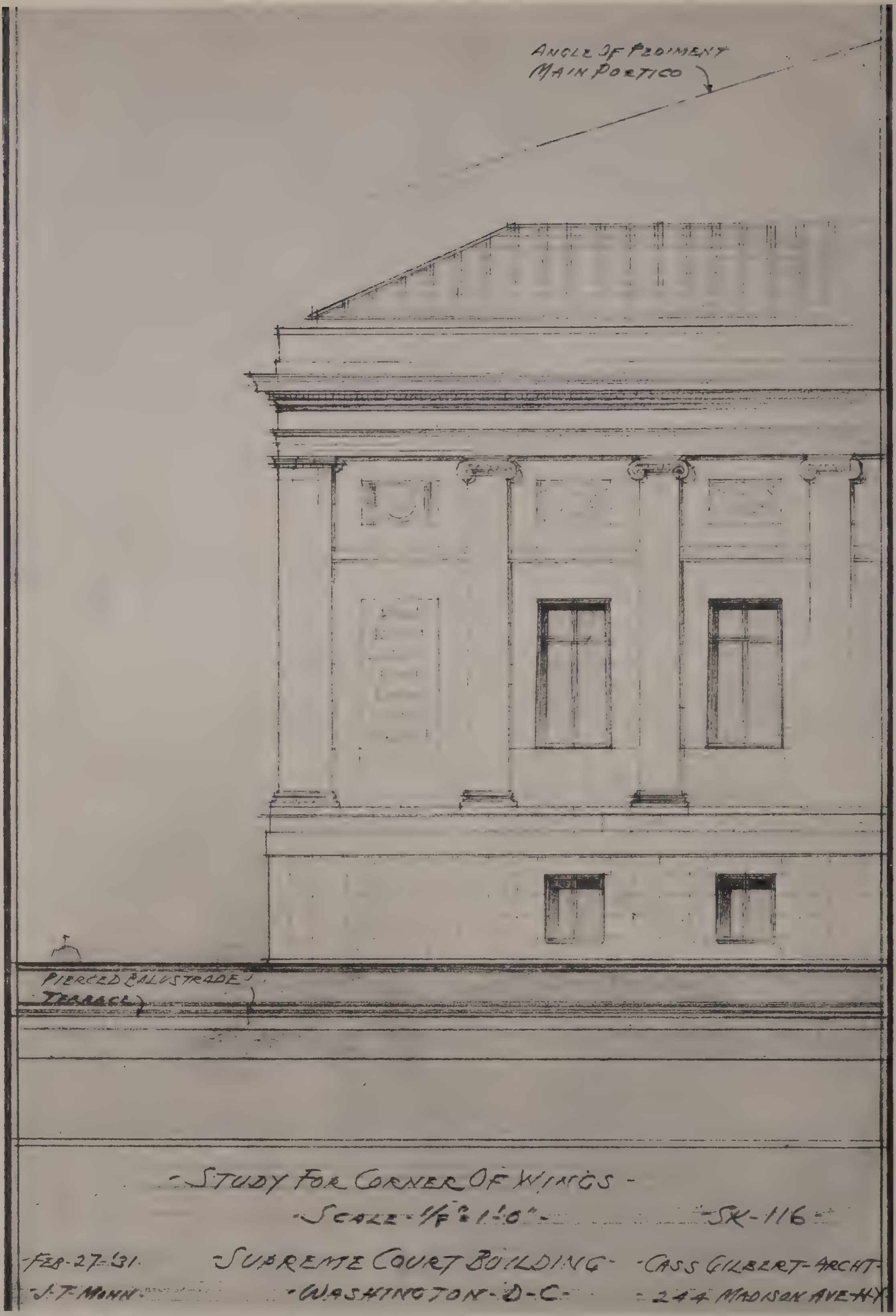
A detail of the south side of the west portico from the terrace. Incidentally, the marble paving of this terrace and the others is laid with an open joint of one-quarter inch between the slabs, to provide for expansion and contraction



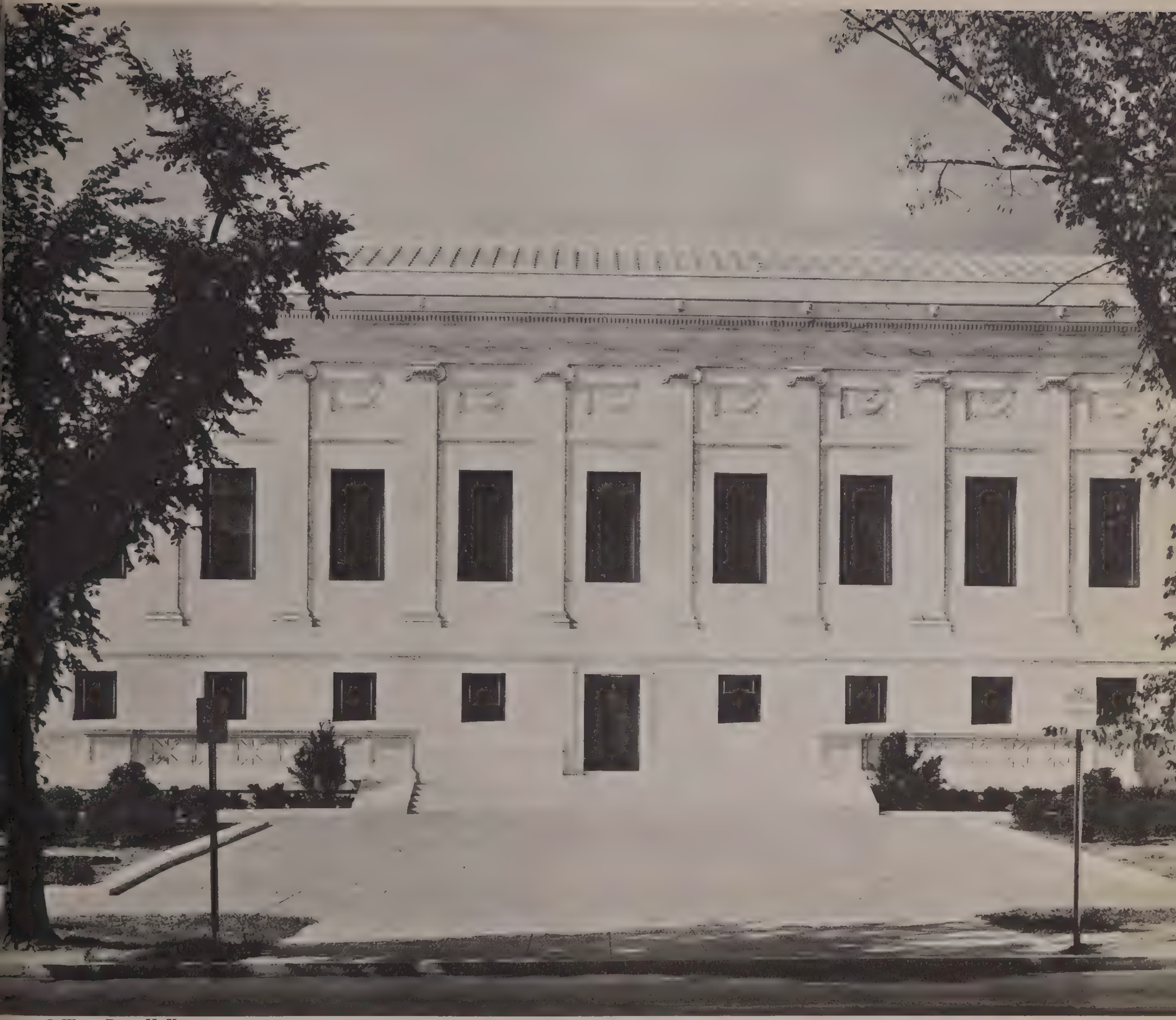
Looking straight up into the ceiling of the west portico. White Vermont marble is used throughout the exterior of the building—Imperial Danby



One of the marble candelabra flanking the west front entrance steps. Modeled by John Donnelly, Jr., in collaboration with the architect



One of the preliminary studies for a corner of the wings. It was felt that the slope of the tile roof would approach closely the angle of the pediment in appearance when viewed from the street. Compare this with the photograph of the wing on the facing page



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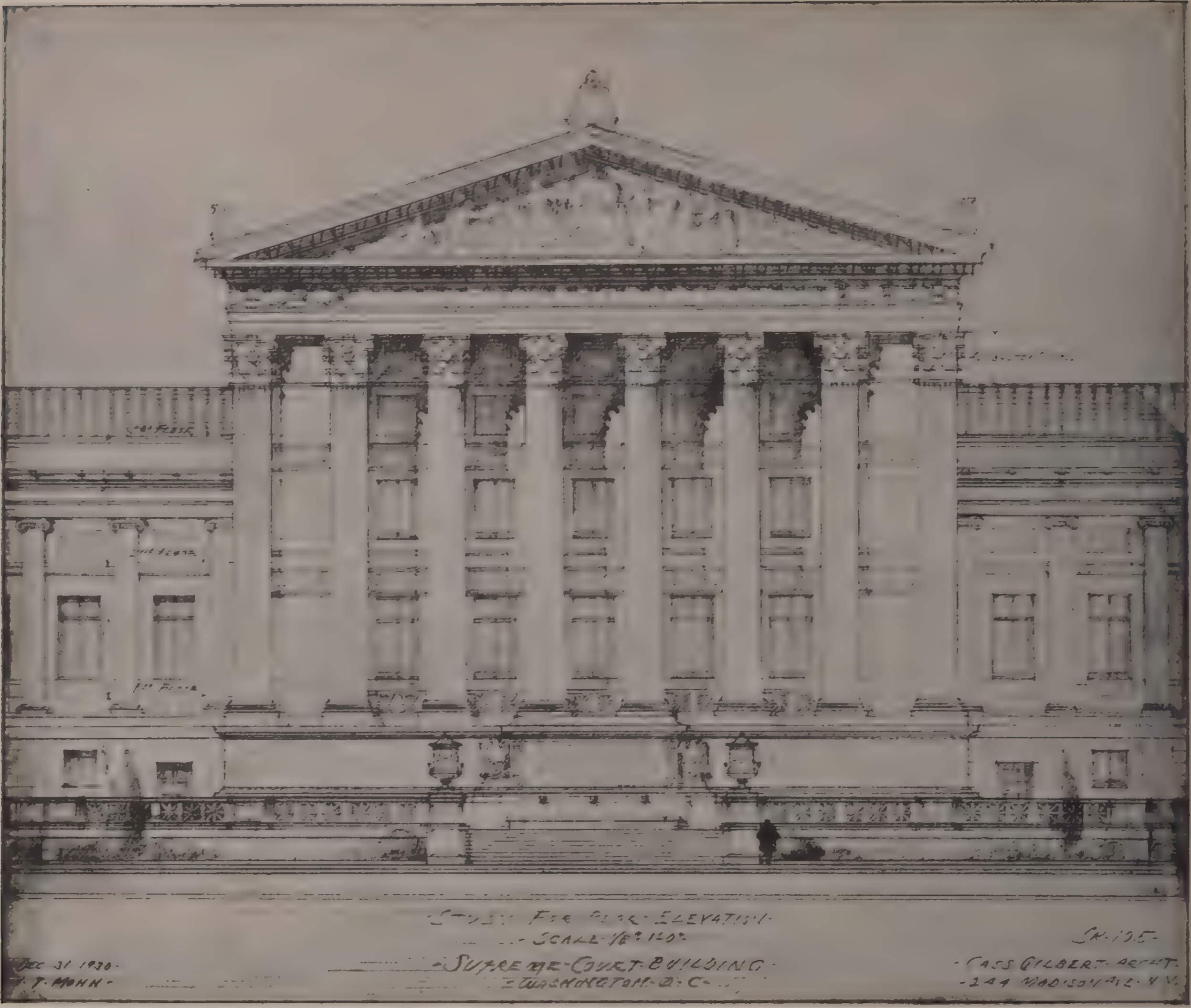
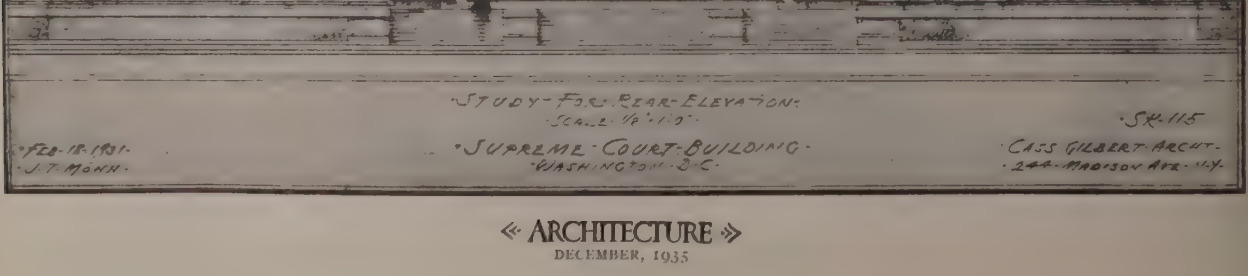
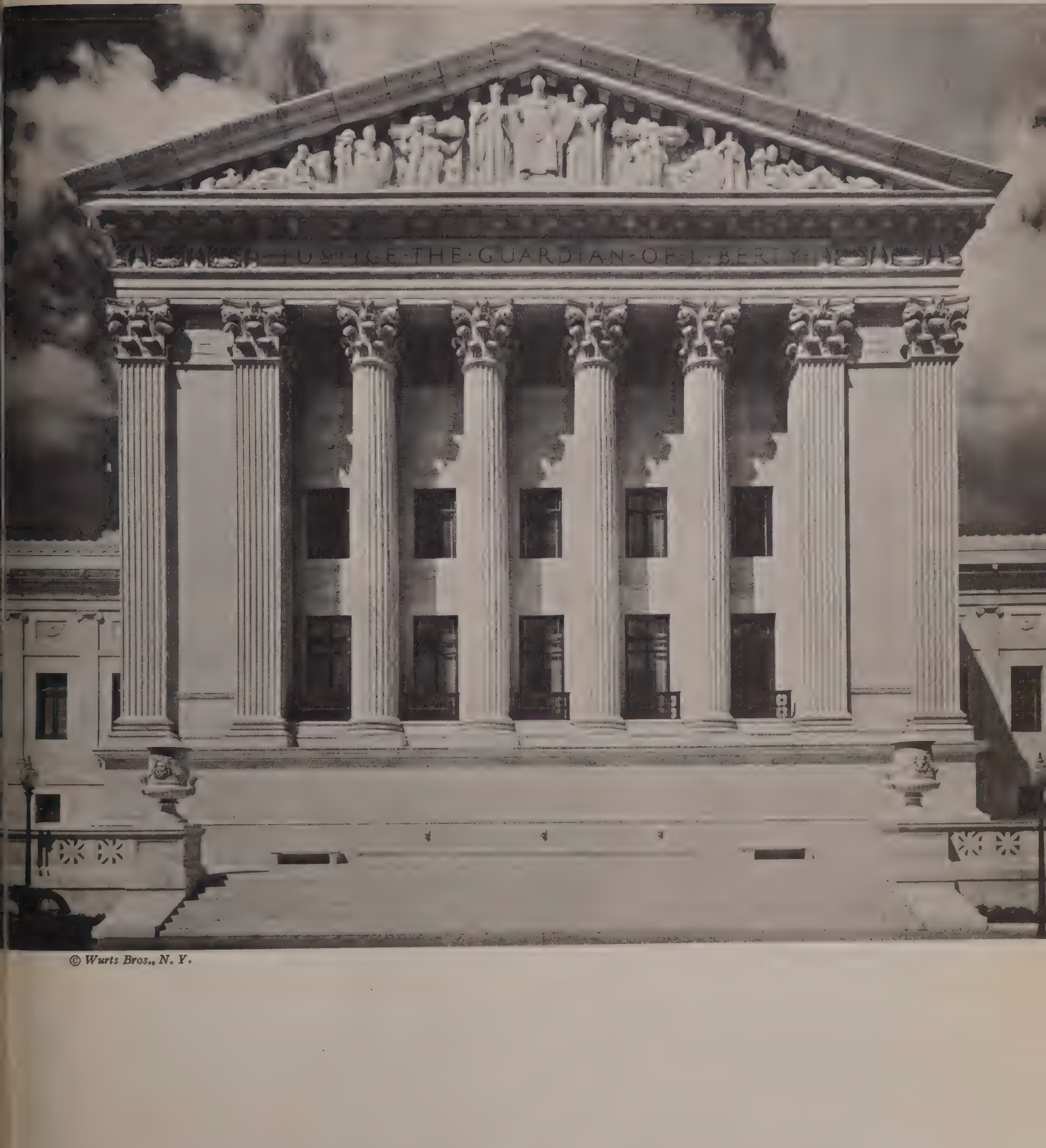
The south entrance on East Capitol Street, leading to the ground floor. The Maryland Avenue entrance opposite is identical



It is interesting to compare this study for the rear or east elevation with the photograph opposite. The photographer has caught the shadows at almost the same angle as those mechanically cast in the drawing

A later study of the lower portion of the rear elevation, widening the steps and inscription on the base. Compare with the photograph, which indicates a later decision to omit the inscription





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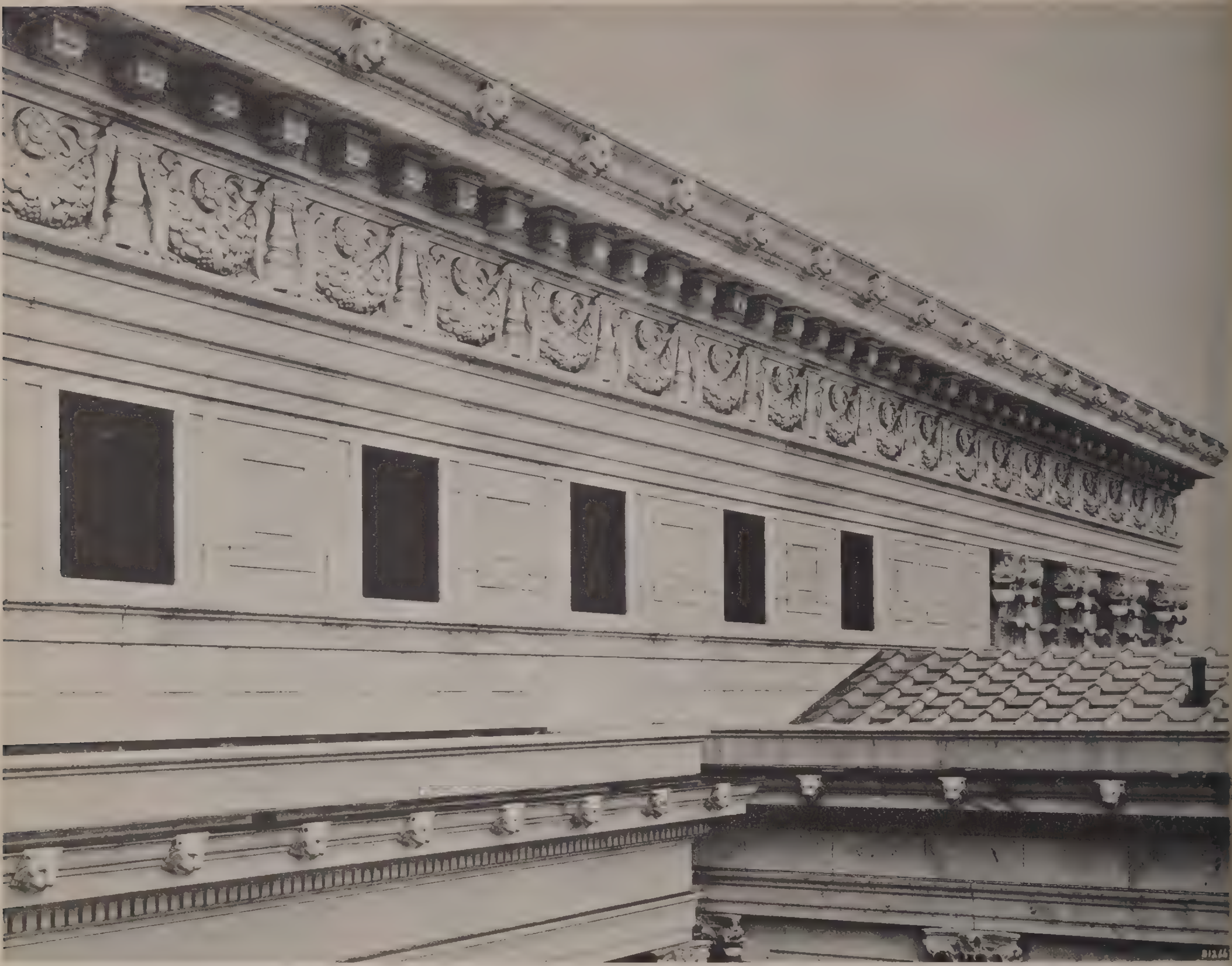
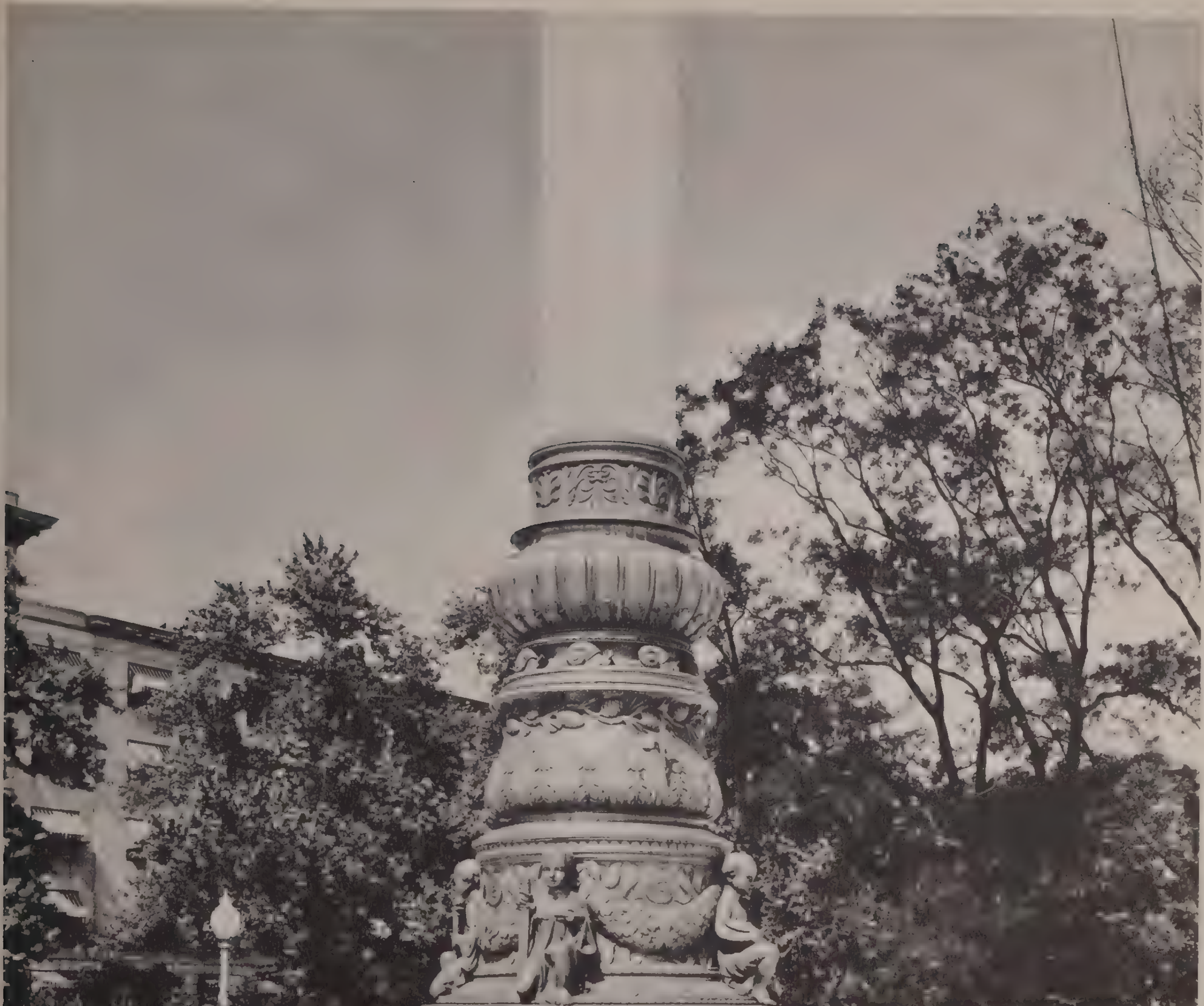
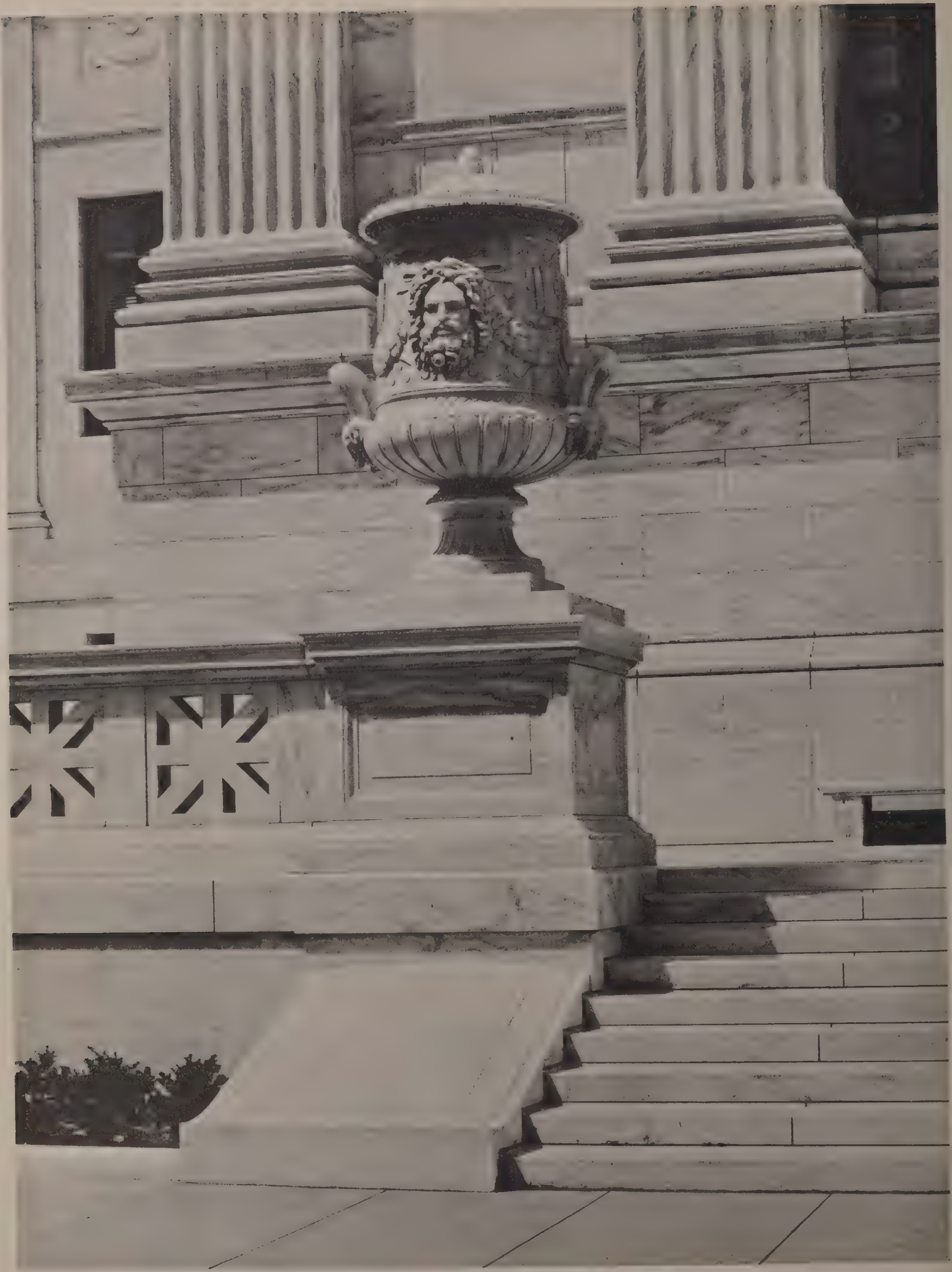
The east end of the main building. The sculptured pediment is the work of Hermon A. MacNeil



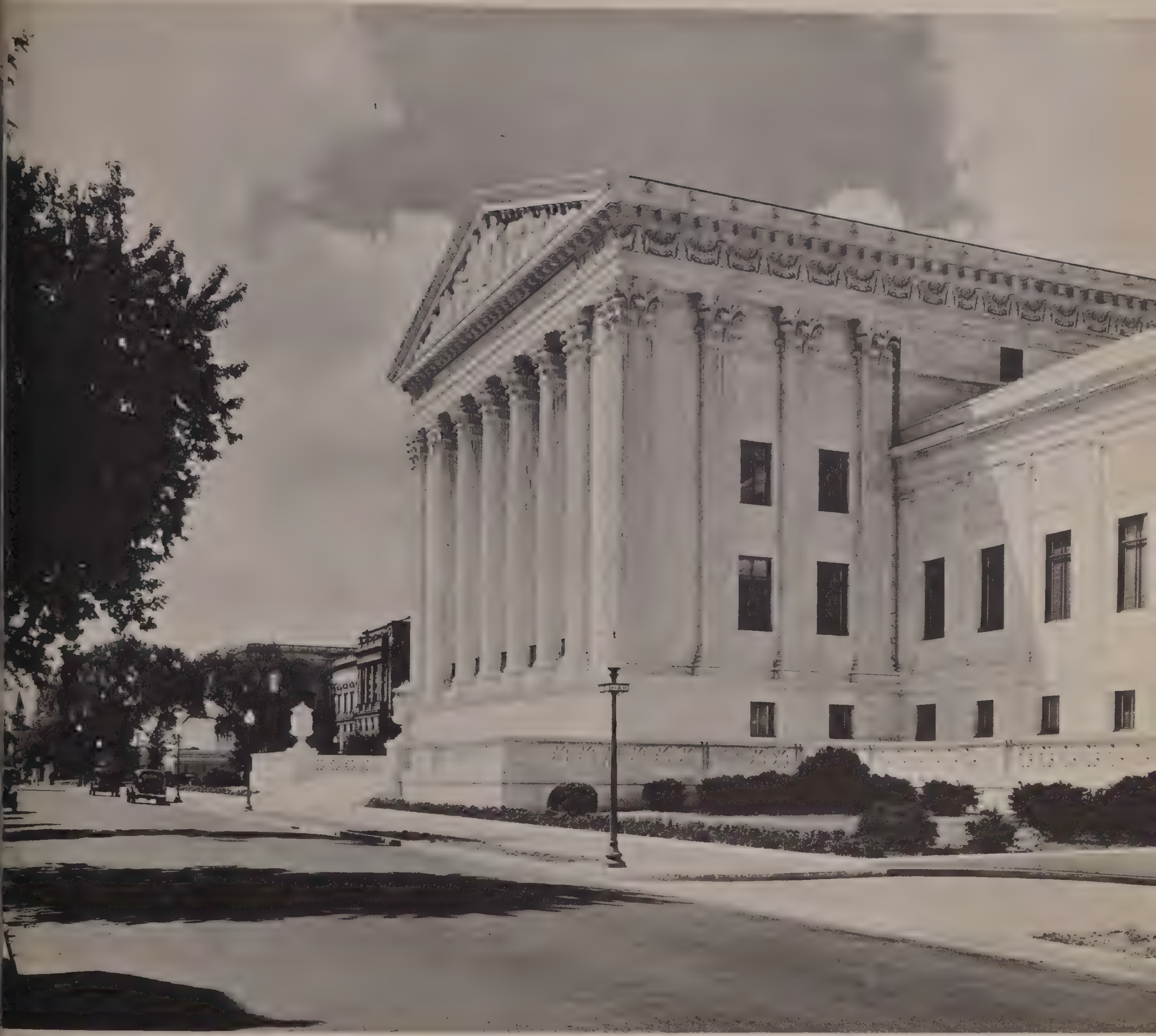
A detail of the main cornice where a wing joins the main structure. The photograph is taken from the roof of the wing looking over one of the courts



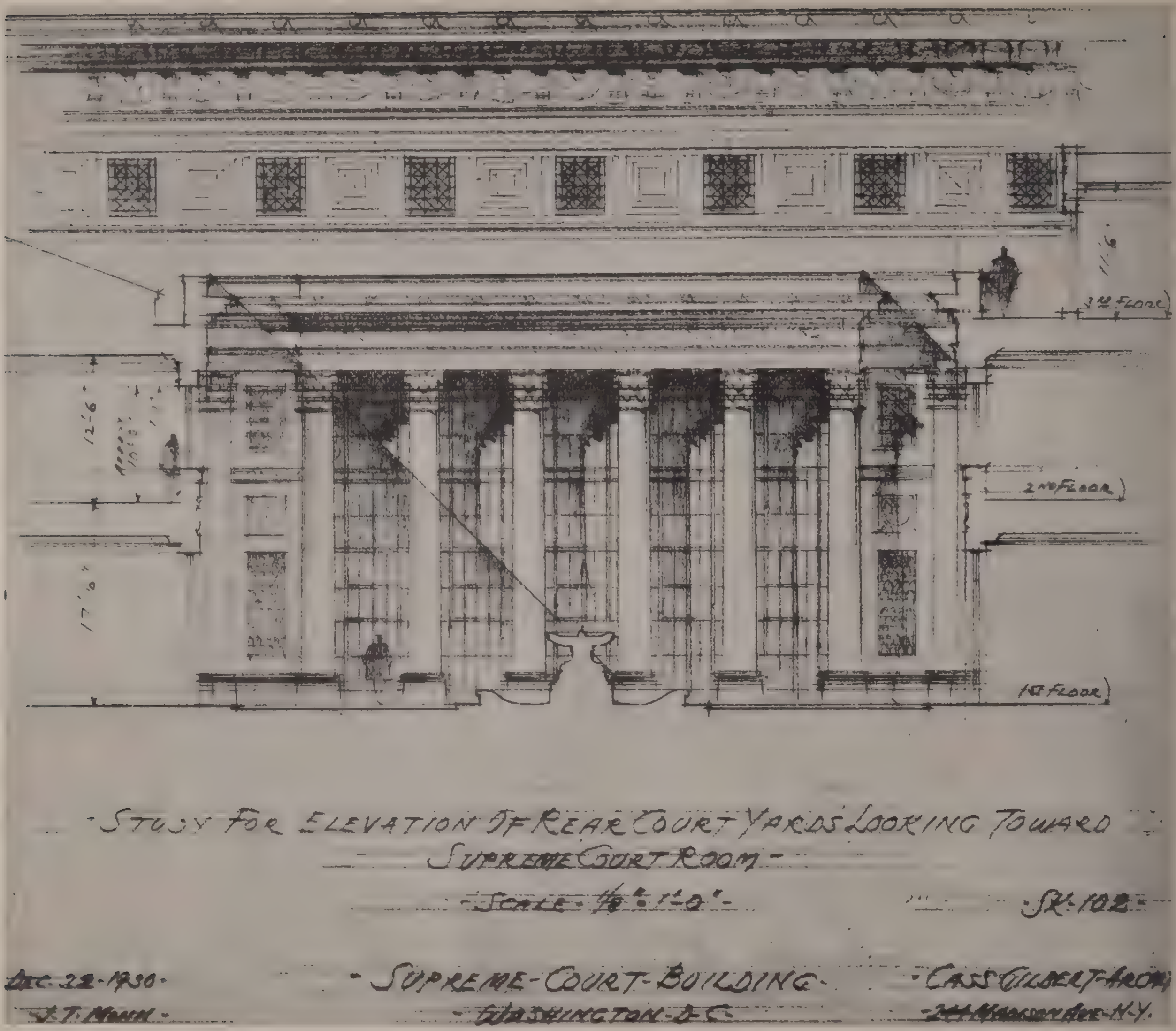
One of the flagpole bases on the west terrace—sculptured in bronze on a marble base. Modeled by John Donnelly, Jr., in collaboration with the architect



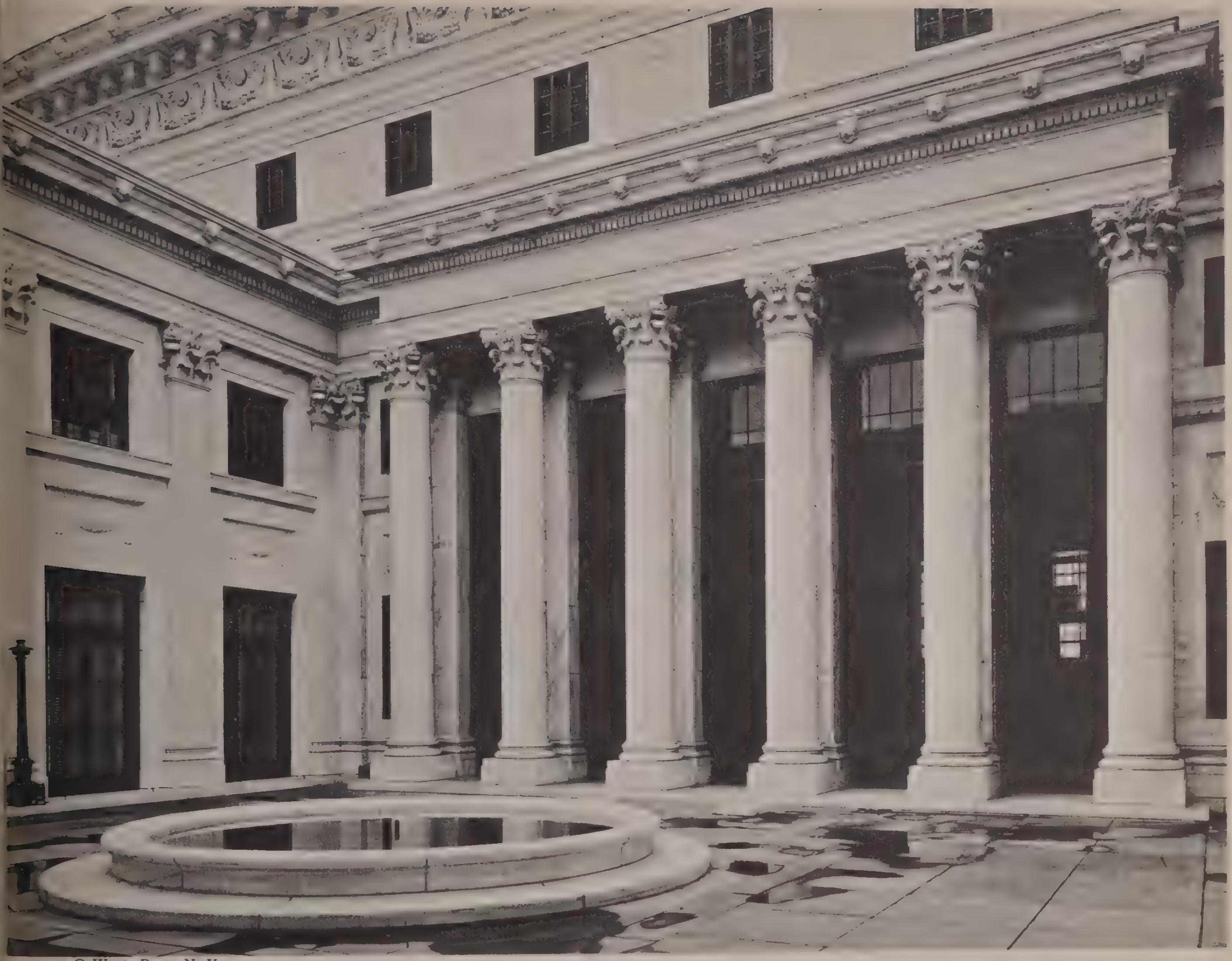
A detail of the urn, steps, and balustrade flanking the east entrance. Urn modeled by John Donnelly, Jr., in collaboration with the architect



The east end of the main building, showing the juncture of the lower portion with the higher, taken from Second and A Streets, N.E.



A preliminary study in pencil for the elevation of a rear courtyard. Behind the free-standing columns of Georgia marble is the Supreme Court Room



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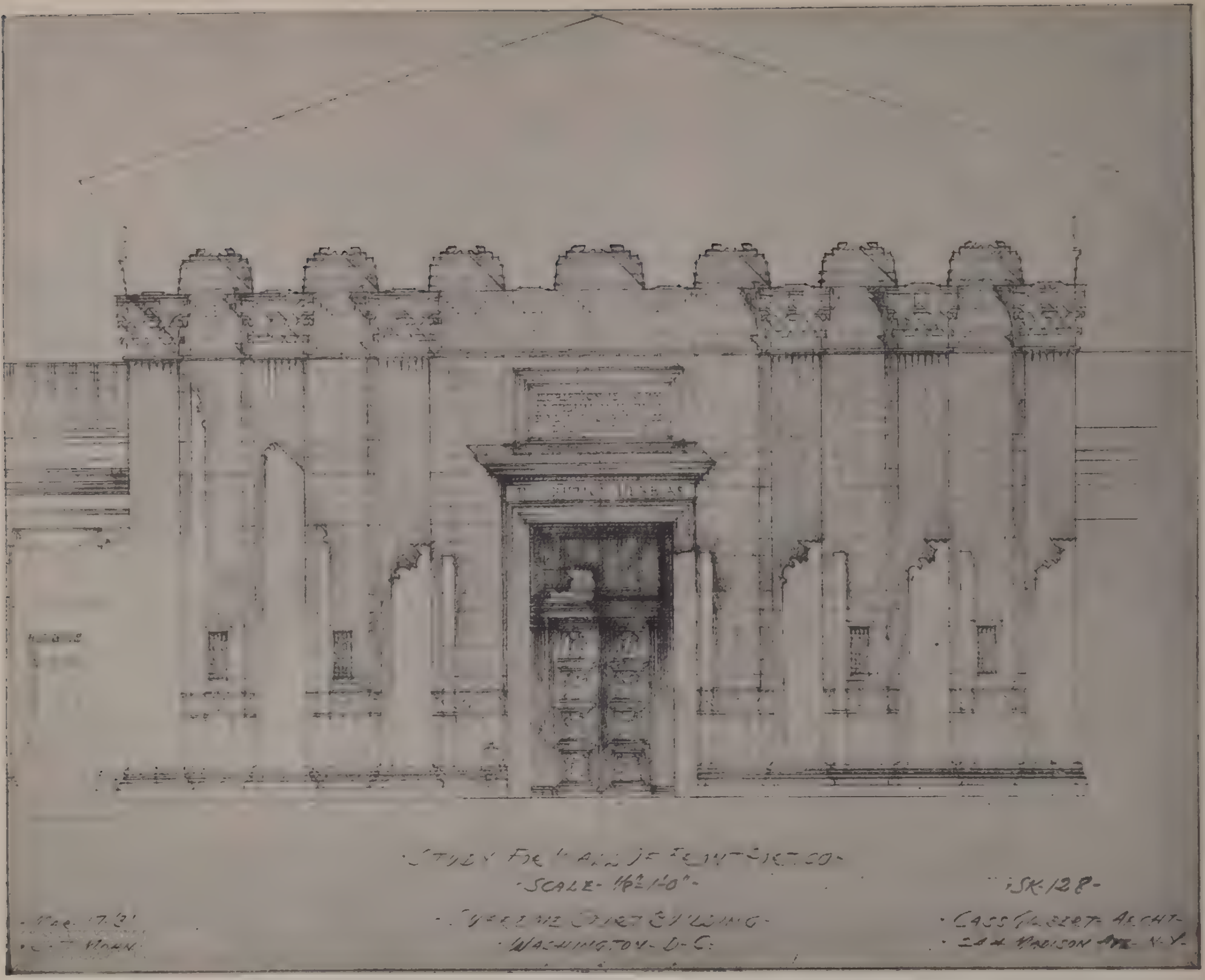
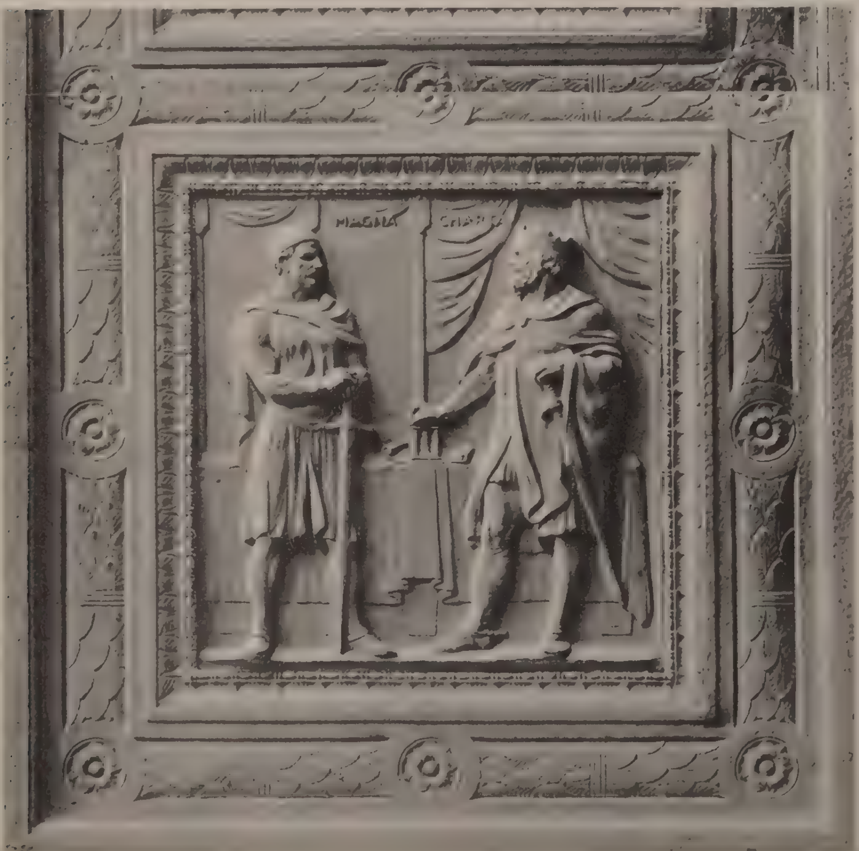
In the southeast courtyard, looking toward the Supreme Court Room. There is an indication on the plan (page 305) that a simple treatment of planting was contemplated in these courts

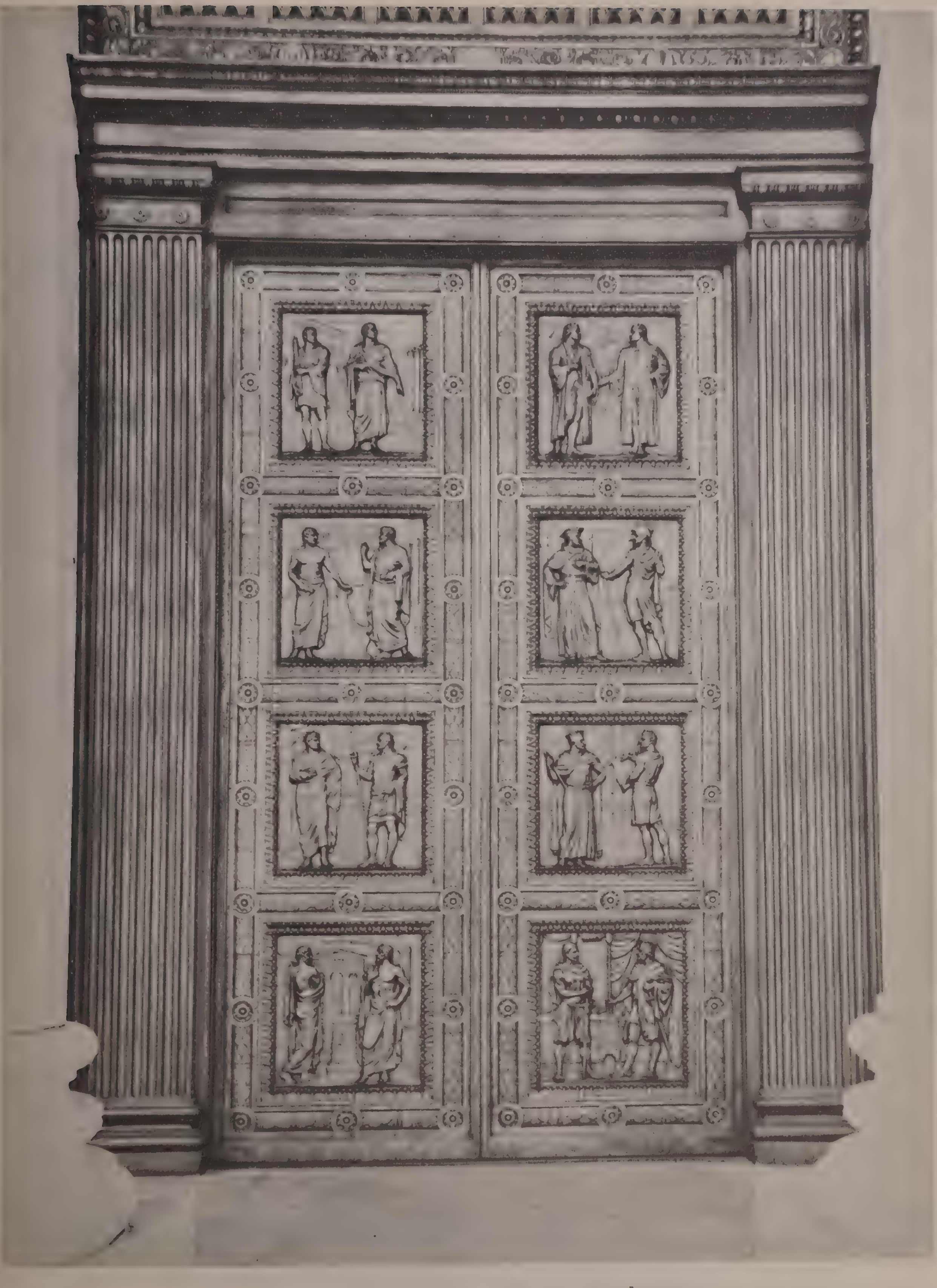


A preliminary study in pencil for the wall of the front portico. In front of it there is a double row of columns. Here again the projected inscriptions were finally omitted

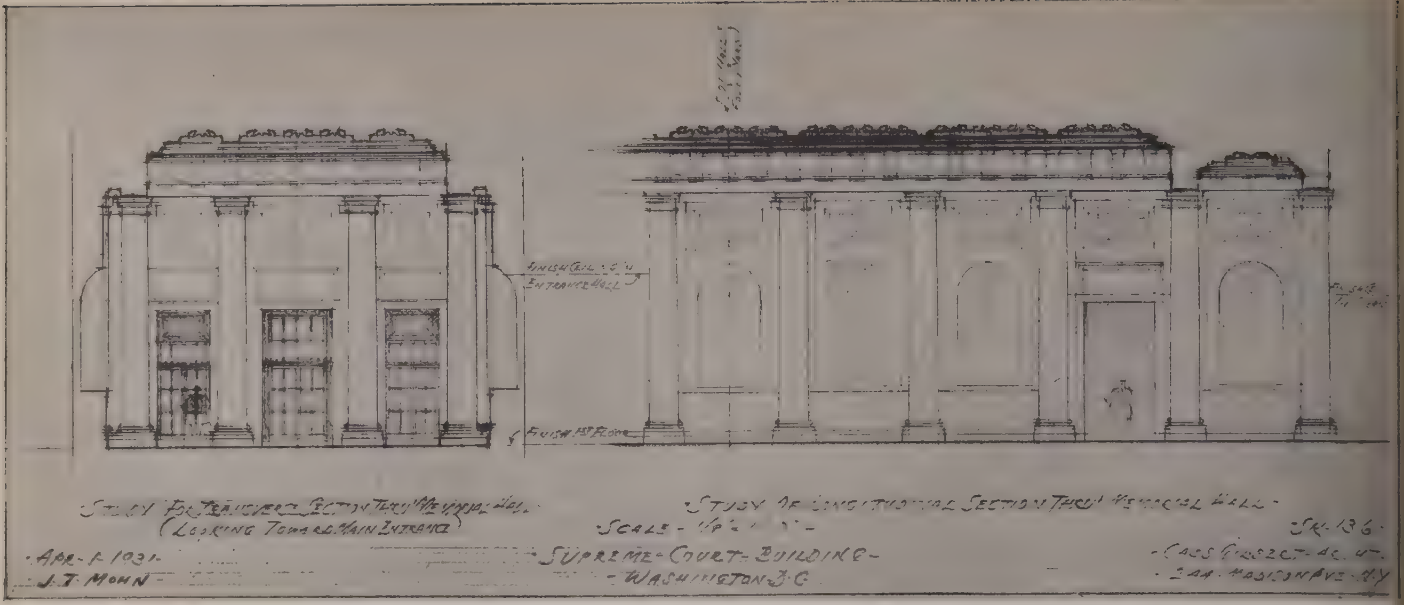


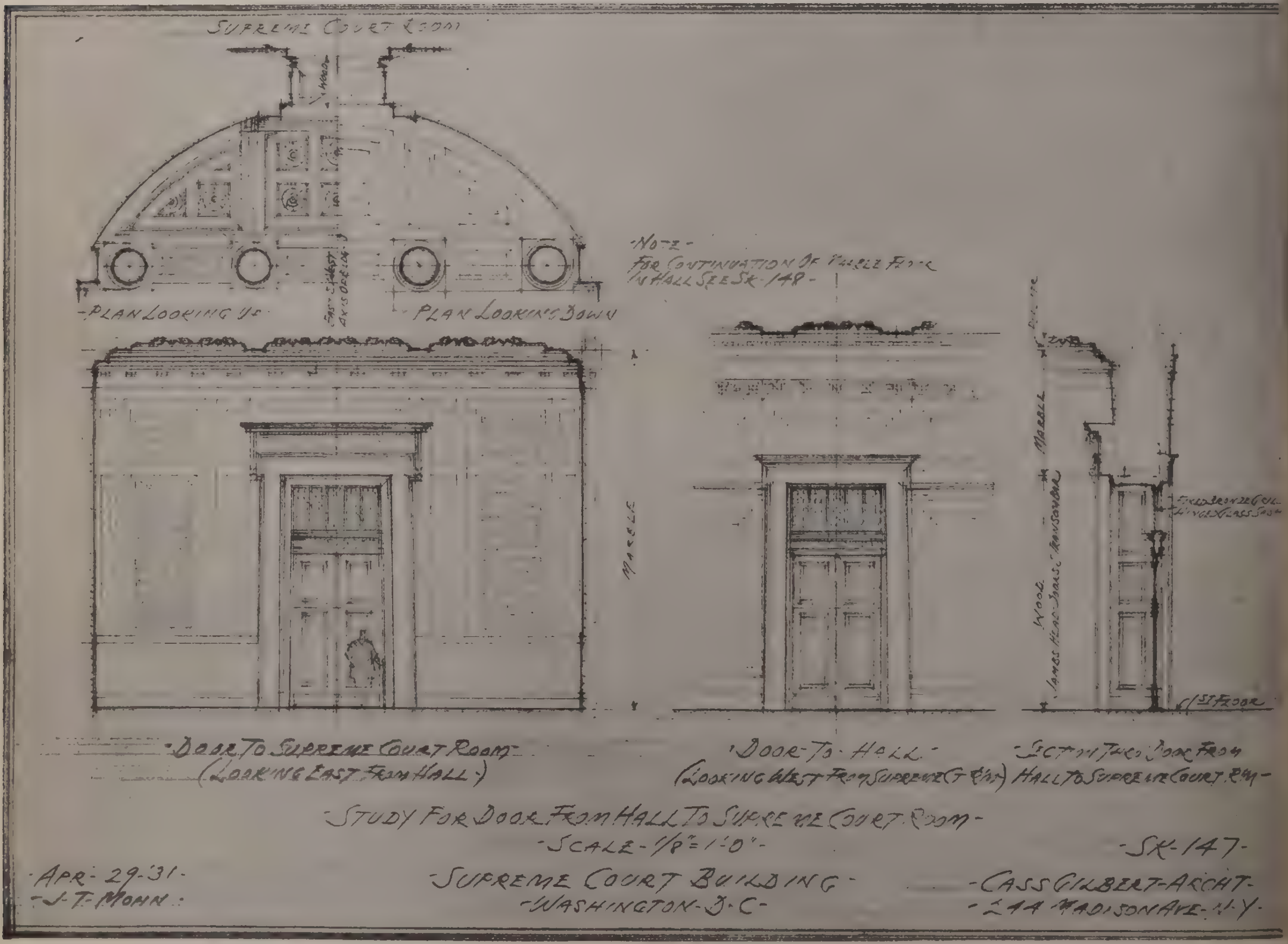
Photograph by Louis H. Dreyer

A close-up detail of the bronze doors in the west front, as shown on the facing page

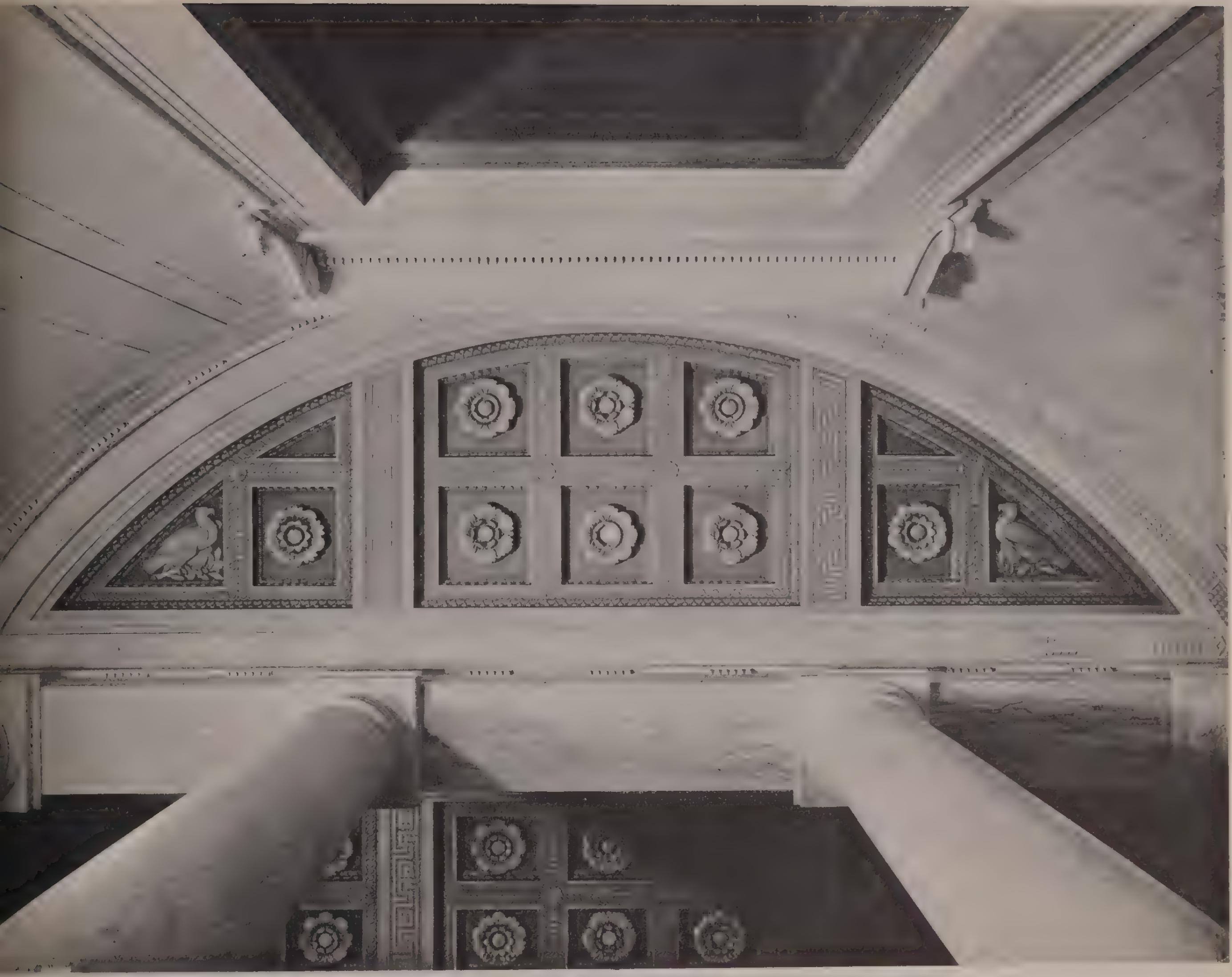


The bronze doors of the main entrance on the west front. Modeled by John Donnelly, Jr., in collaboration with the architect

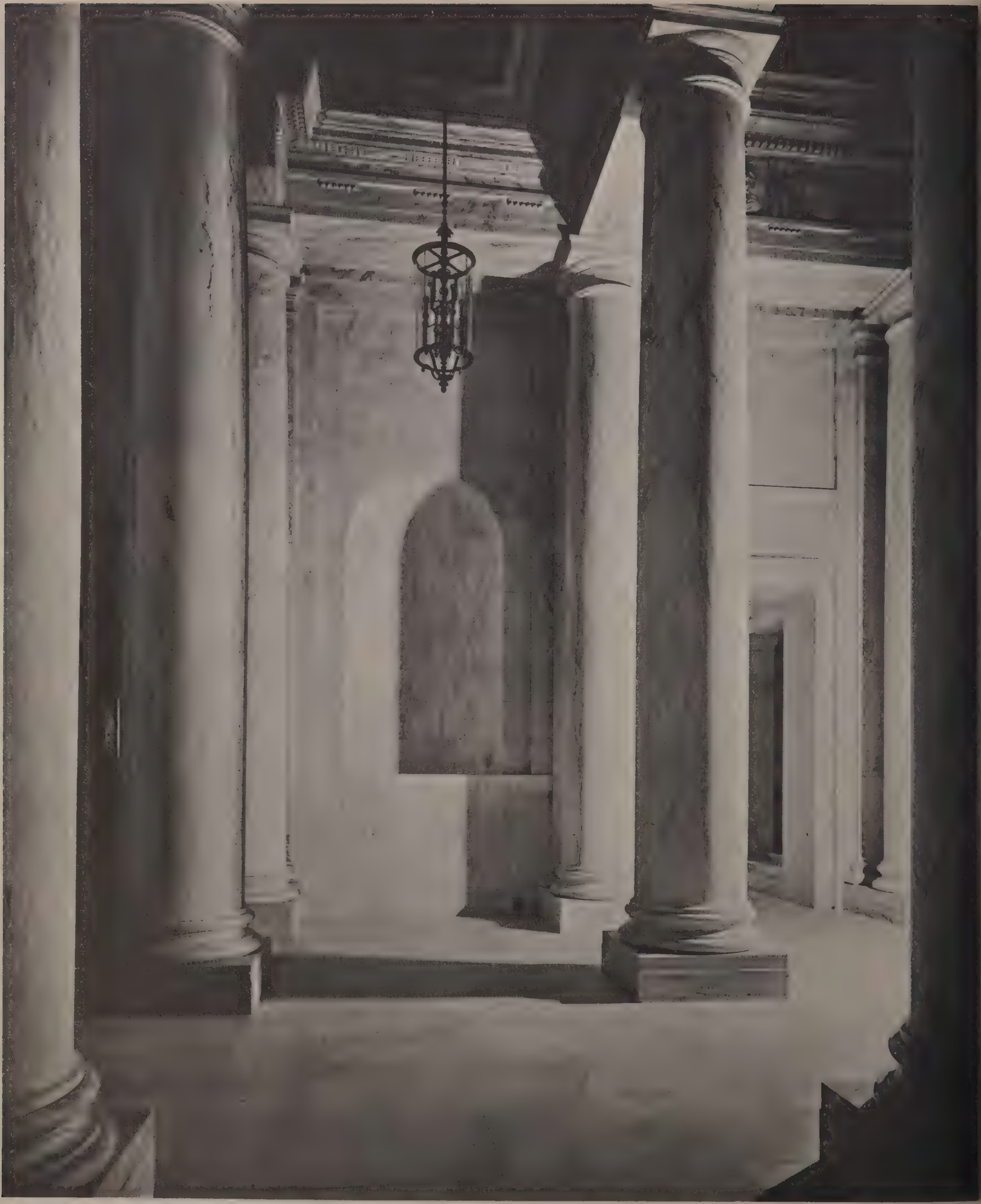

Finish Ceil'g of Entrance Hall
Finish 1st Floor
Study for Transverse Section thru Memorial Hall
(Looking Towards Main Entrance)
Study of Longitudinal Section thru Memorial Hall
Scale 1/8" = 1'-0"
SK-136
Apr-1-1931
J.T. Mohn
Supreme Court Building
Washington D.C
Cass Gilbert Archt
244 Madison Ave N.Y


Supreme Court Room
Wood
Plan Looking Up
East & West Axis of Bldg
Plan Looking Down
Note
For Continuation of Marble Floor in Hall See SK-148
Marble
Marble
Wood
James Hlas-Daniel Ransome
Fixed Bronze Grill Hinged Glass Sash
1st Floor
Door to Supreme Court Room
(Looking East from Hall)
Door to Hall
(Looking West from Supreme Ct Rm)
Section thru Door from Hall to Supreme Court Rm
Study for Door from Hall to Supreme Court Room
Scale 1/8" = 1'-0"
SK-147
Apr 29 '31
J.T. Mohn
Supreme Court Building
Washington D.C
Cass Gilbert Archt
244 Madison Ave N.Y

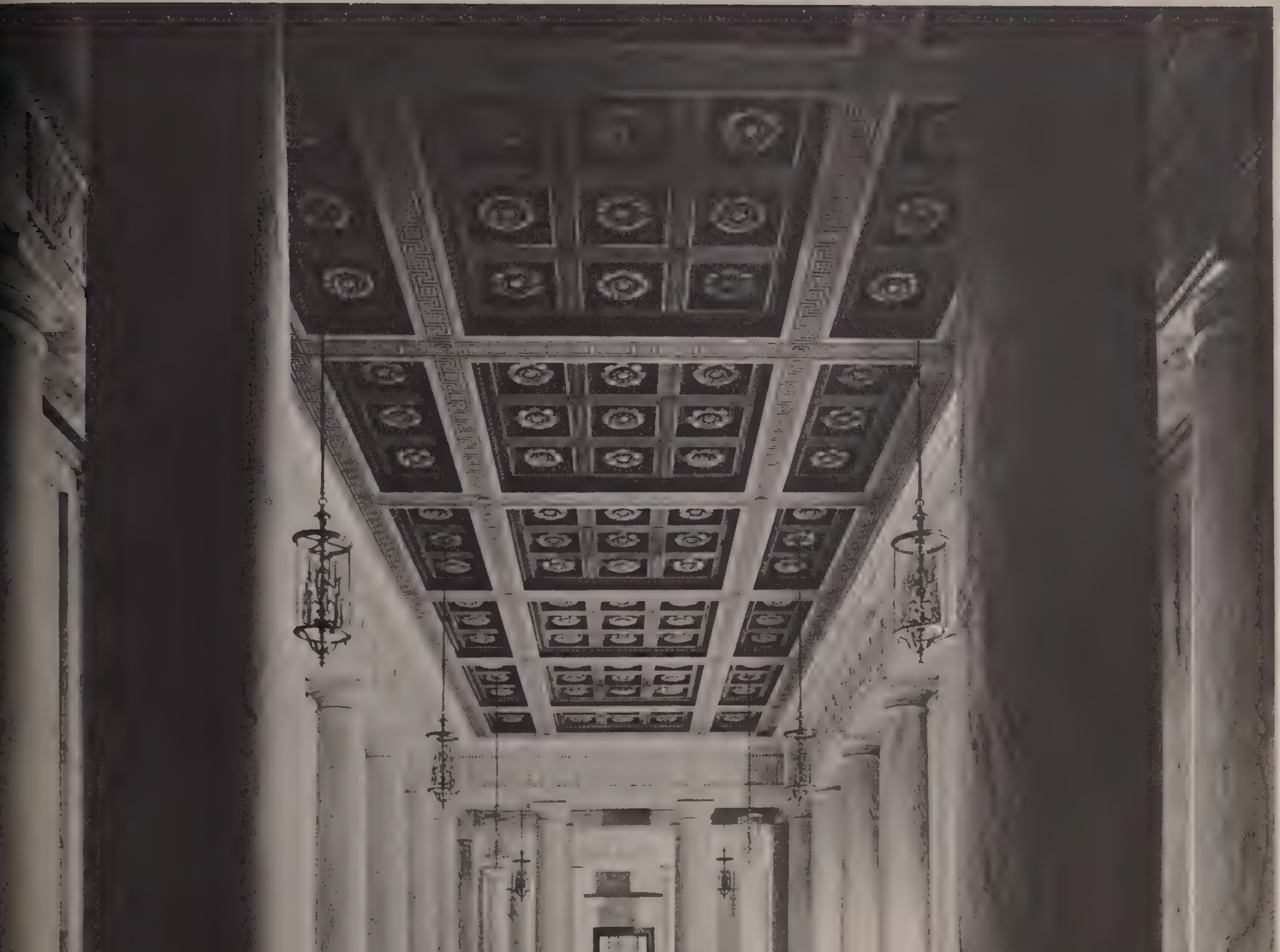
Preliminary studies for Memorial Hall—the main approach to the Supreme Court Room



Looking directly up to the ceiling immediately in front of the entrance to the Supreme Court Room. The marble throughout the interior, with the exception of that in the Supreme Court Room, is Alabama marble



In the main entrance hall, first floor. At the left, a main transverse corridor extends across the building



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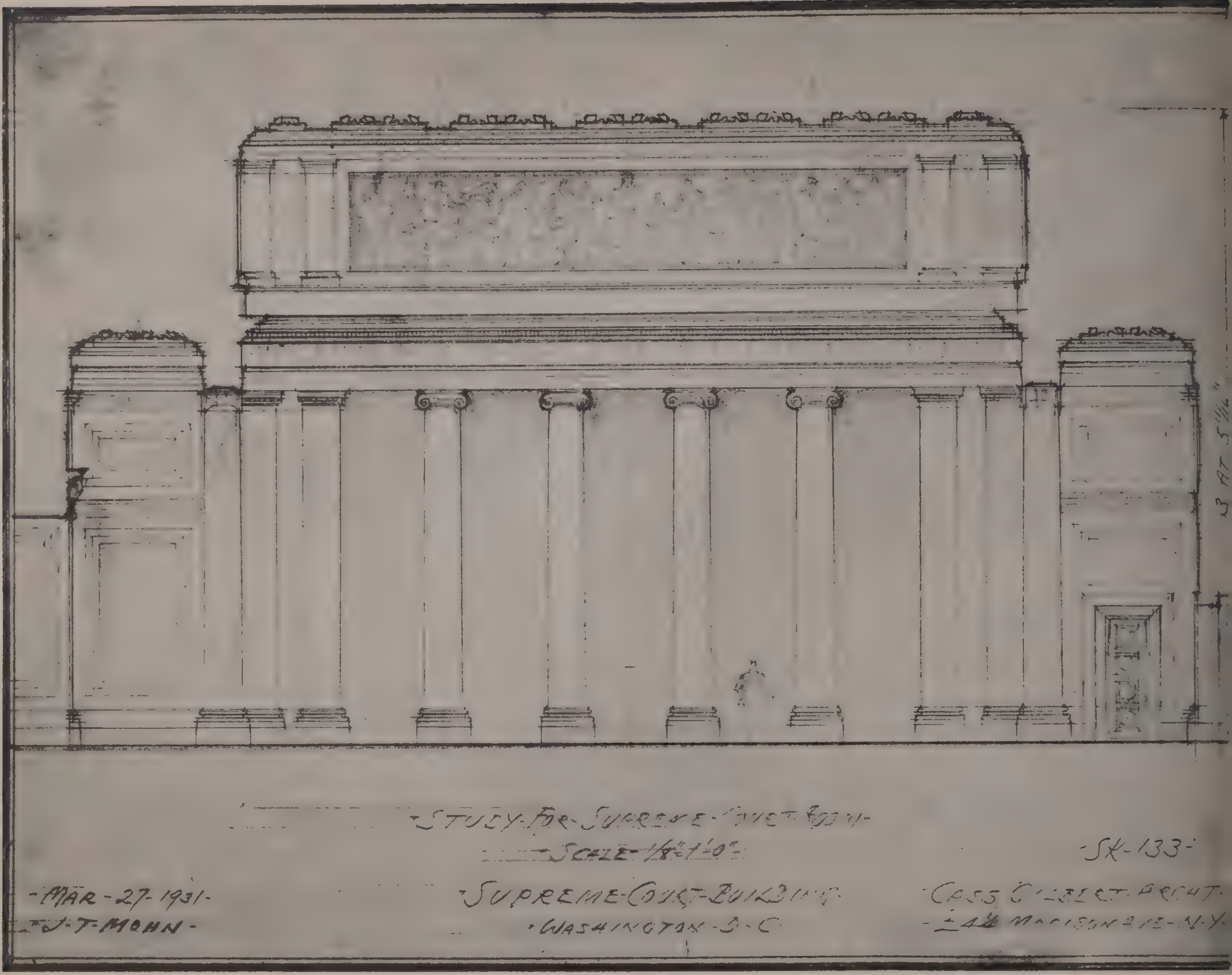
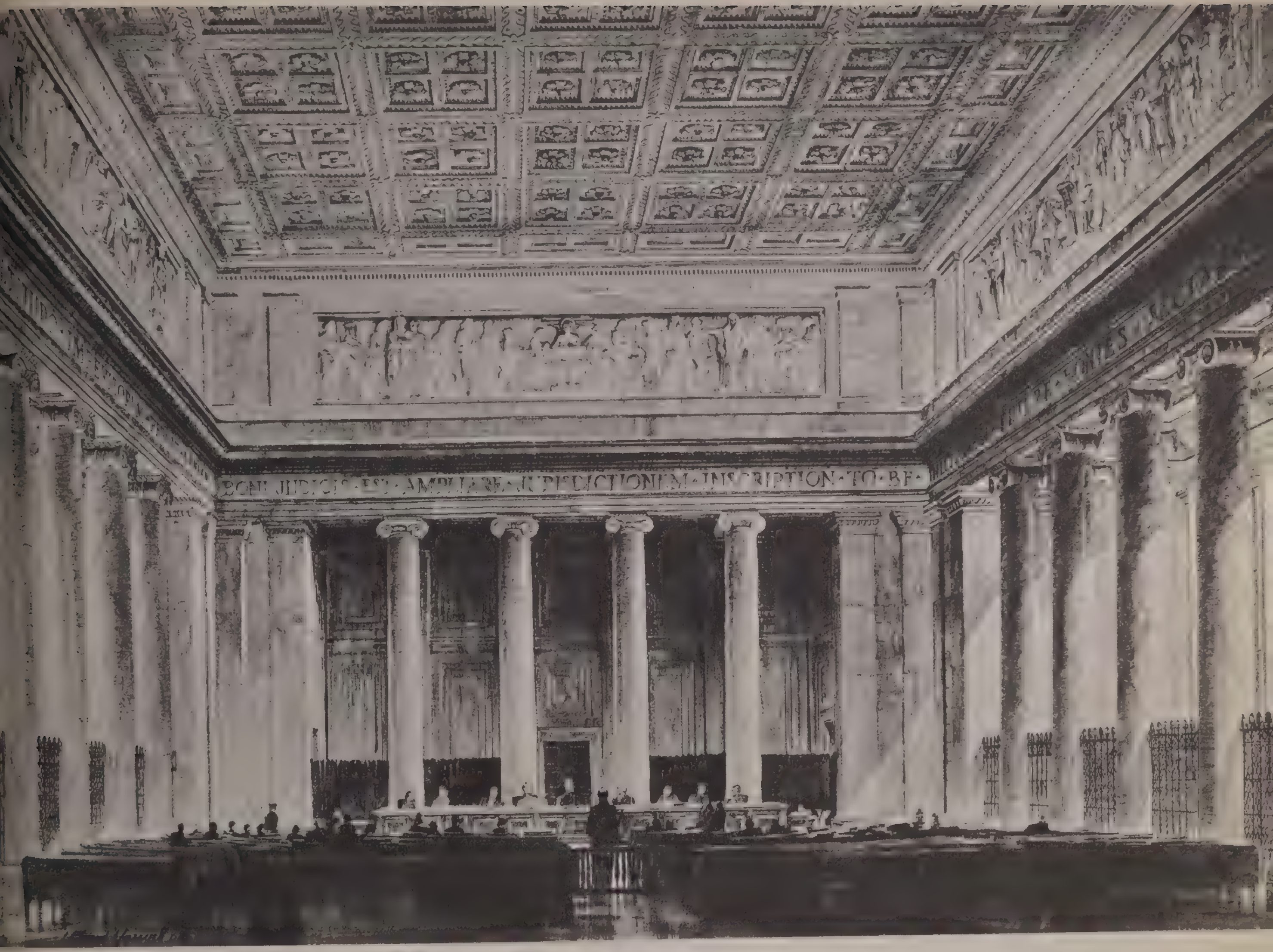
A general view of the Memorial Hall from the entrance door at west. At the far end is the entrance to the Supreme Court Room. The ceiling decoration is by Paris & Wiley



A preliminary study for the Supreme Court Room. Here again the idea of an inscription on the frieze of the order has been abandoned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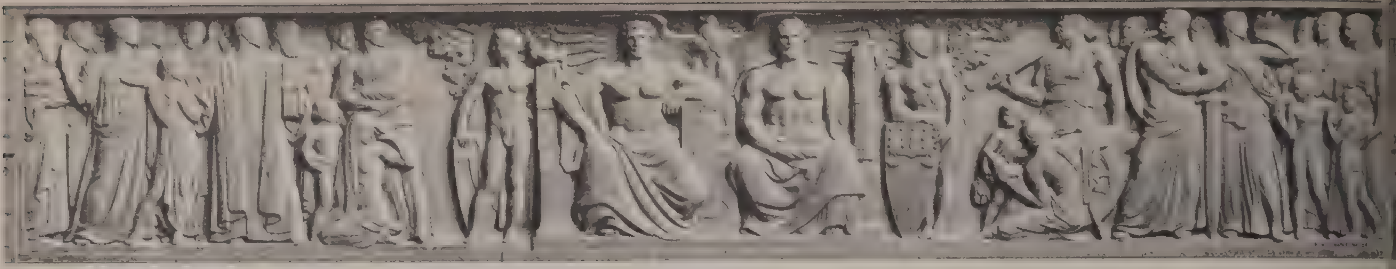
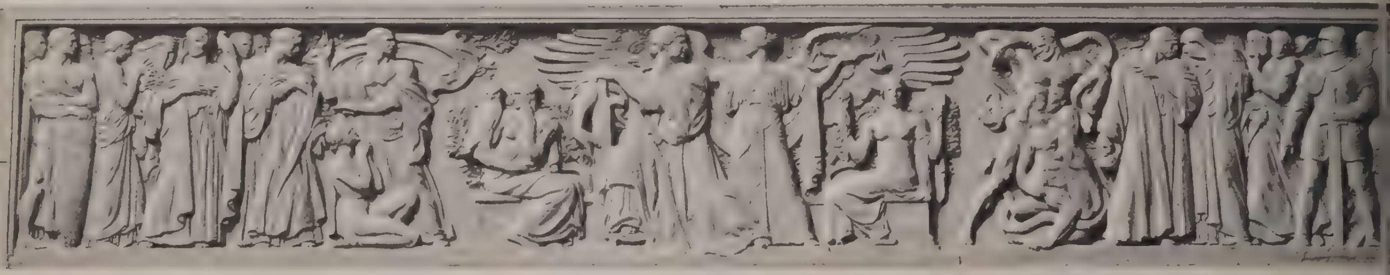
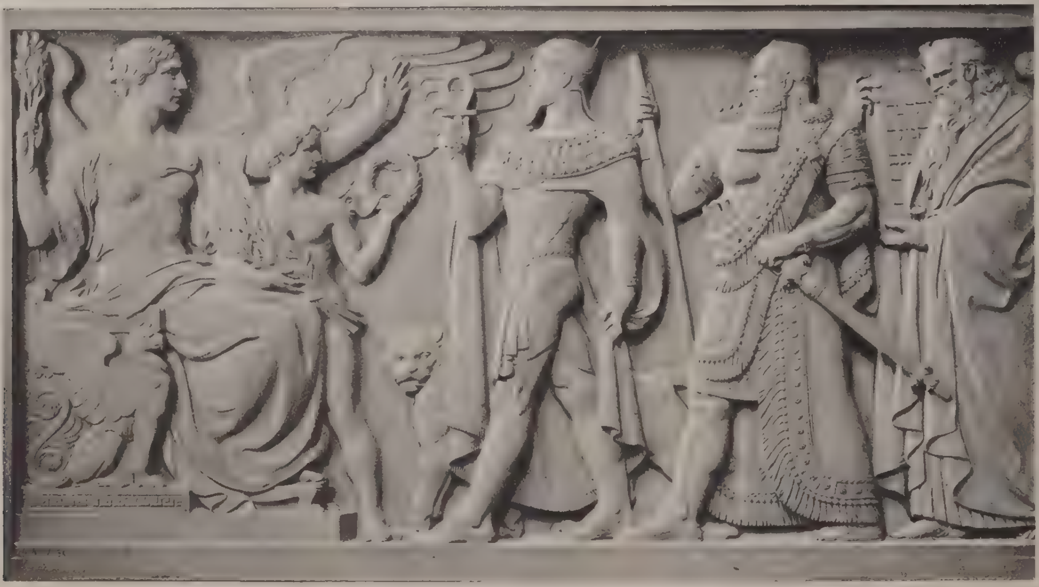
A preliminary perspective of the Supreme Court Room. The drawing was made by J. Floyd Yewell

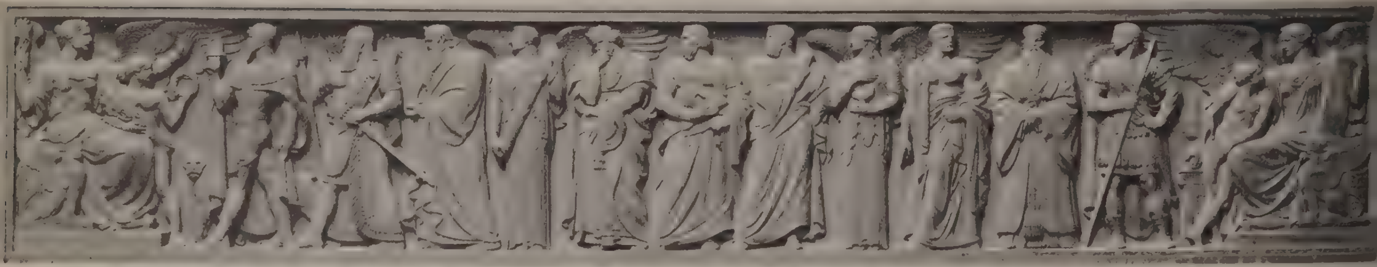


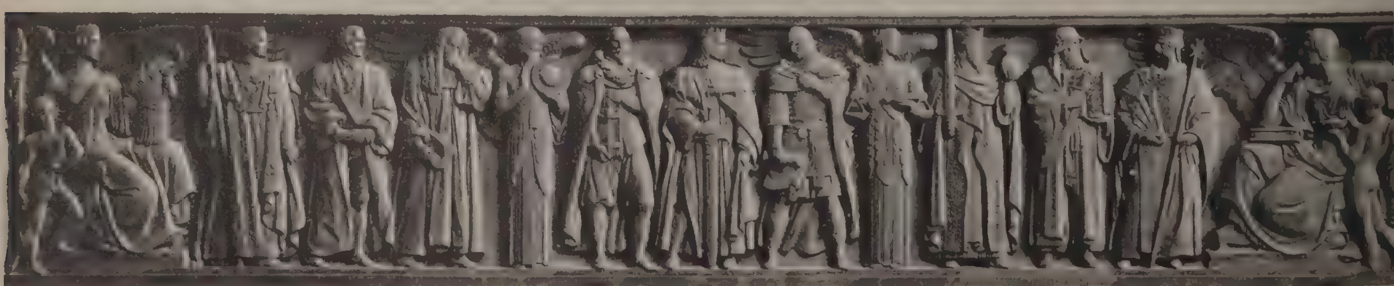


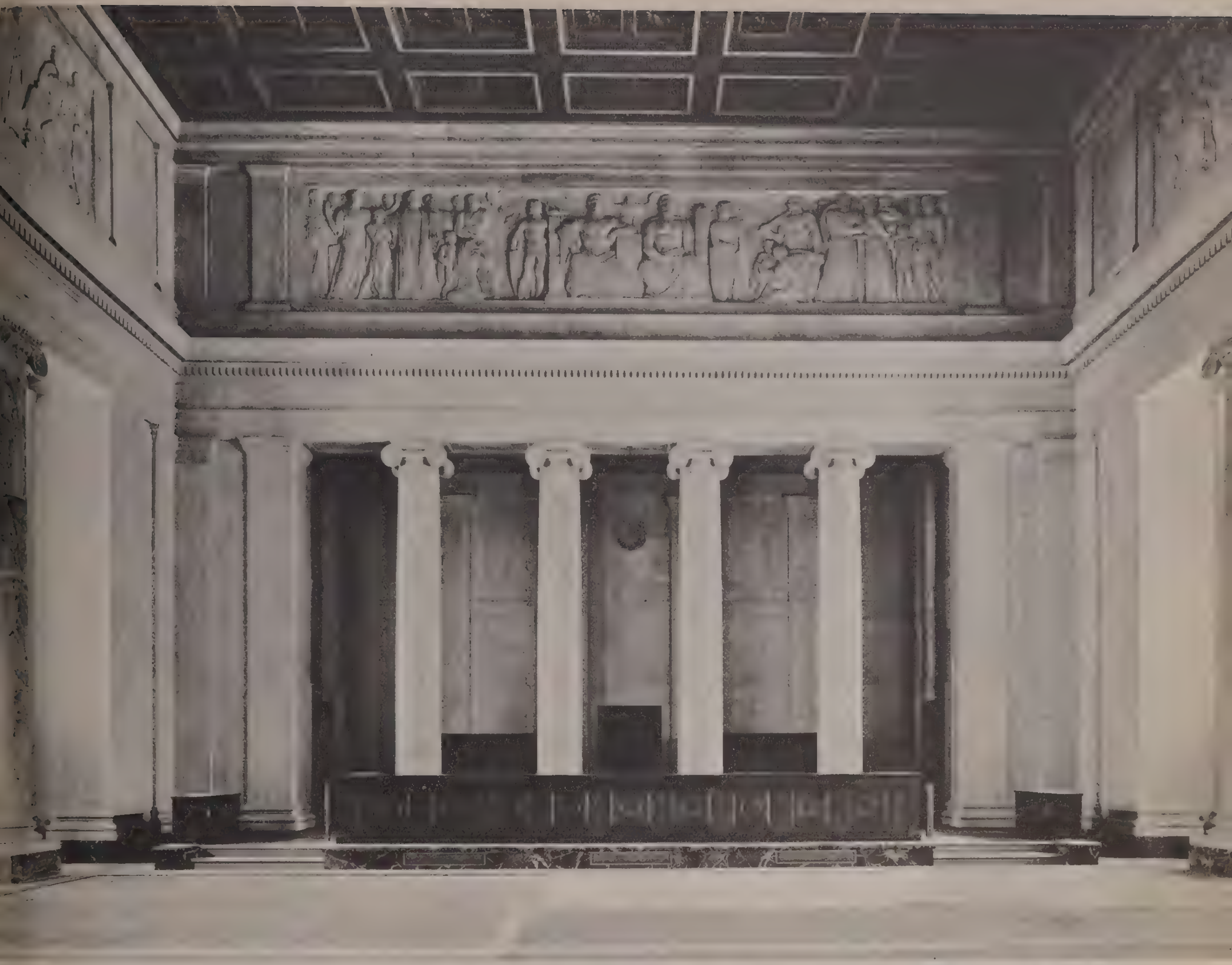


Models of the sculptor, Adolph A. Weinman, for the frieze in the Supreme Court Room. At top of page, "Majesty of the Law and Power of Government" (over the east wall above the Bench). Next below, "Triumph of Justice with Divine Guidance." In the center, a detail of "The Lawgivers." Below, two panels, "The Lawgivers"

Photographs by De Witt Ward







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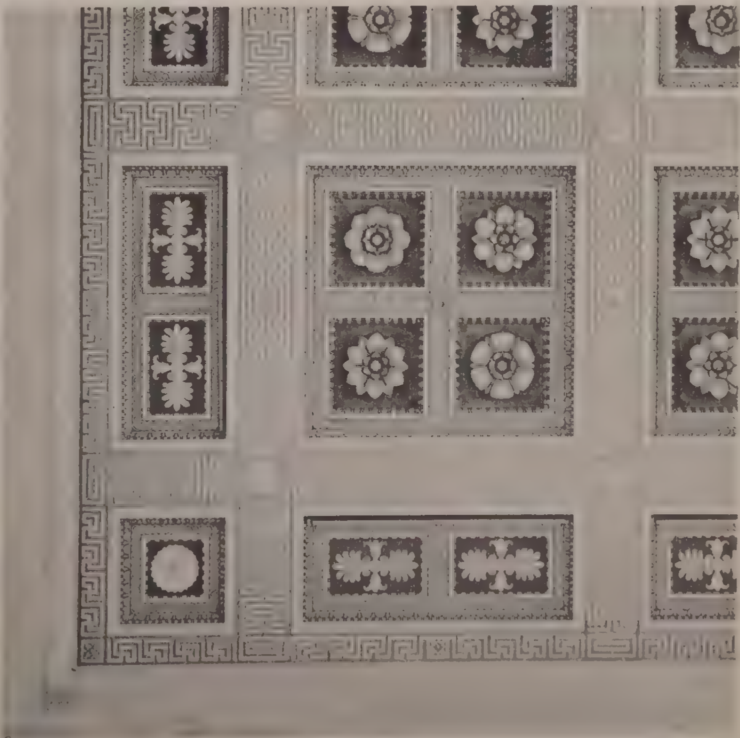
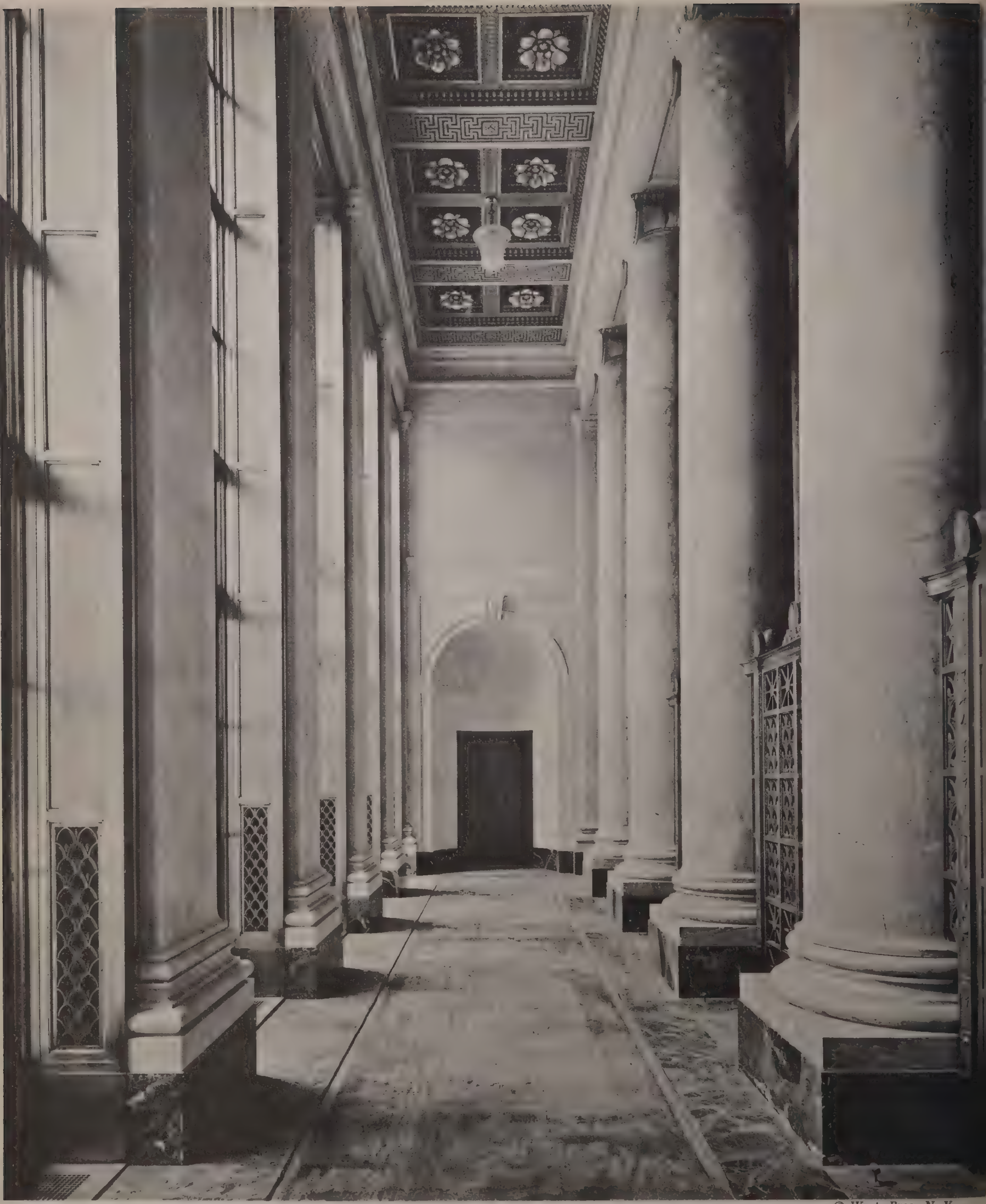
The Supreme Court Room, looking toward the Bench on the east side. In the furnishing of the room, draperies have been hung behind the columns at the rear of the Bench. The room is dominated by twenty-four Ionic columns of Light Siena Old Convent marble; walls are of Ivory Veine. The column bases and a border running around the walls are of darker marble, Levanto. The sculptured frieze is the work of Adolph A. Weinman



A detail of the ceiling in the Supreme Court Room. Decoration by Paris & Wiley



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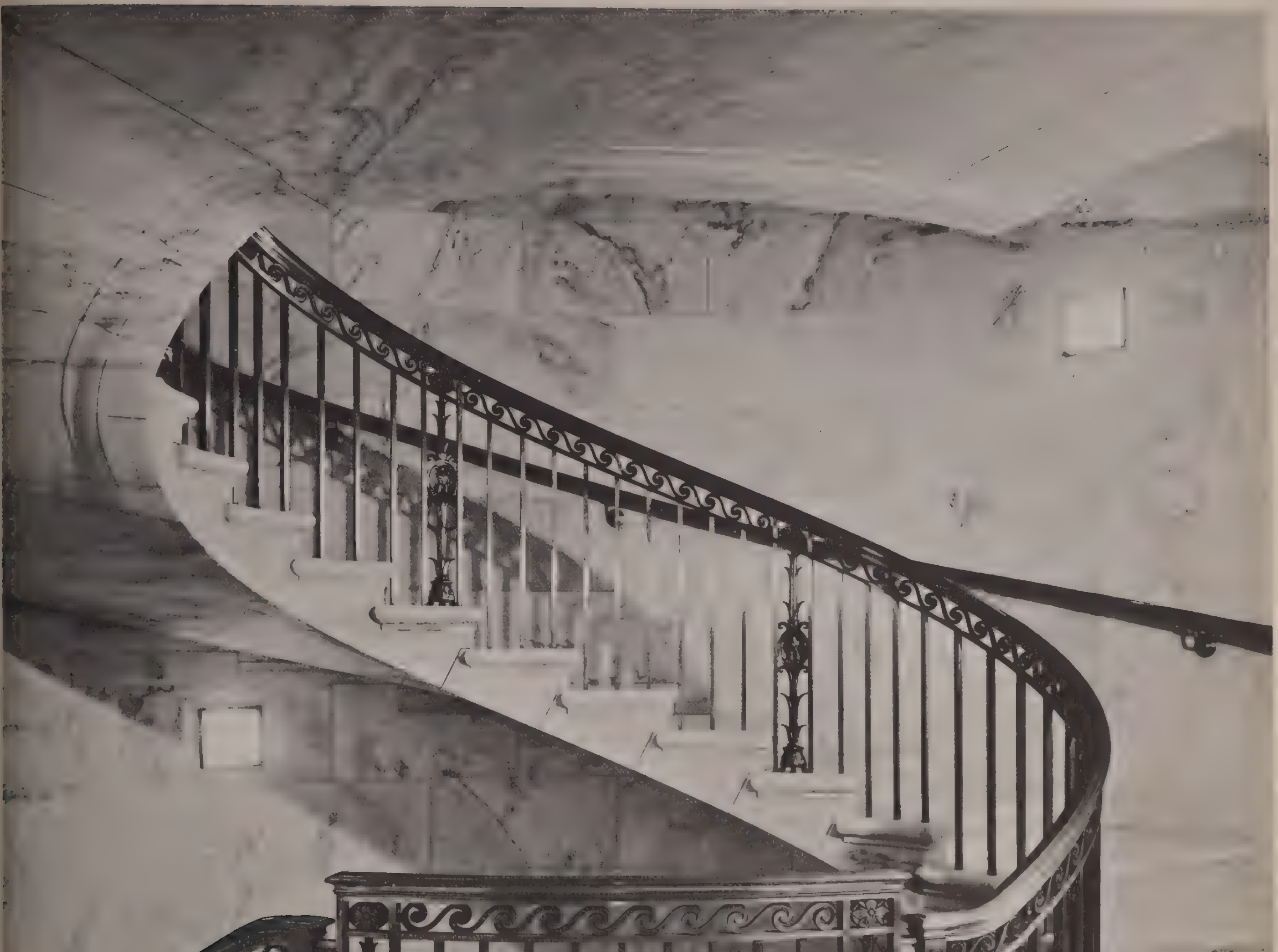
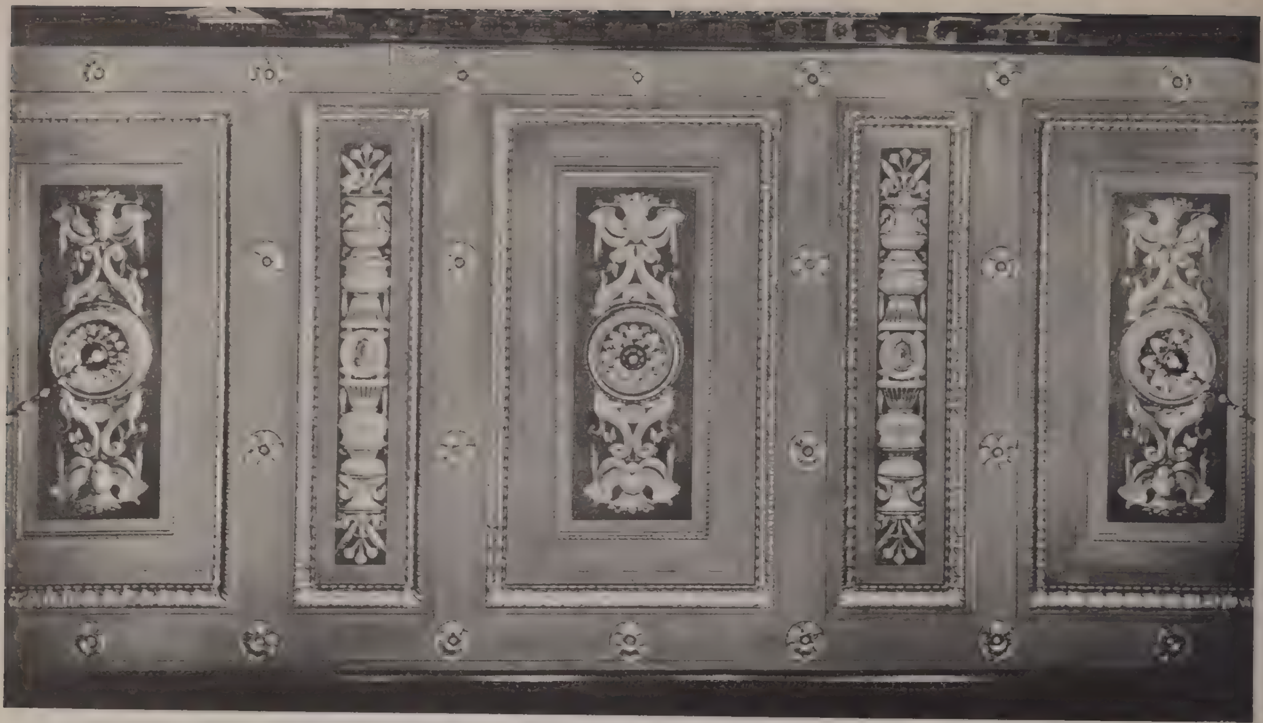
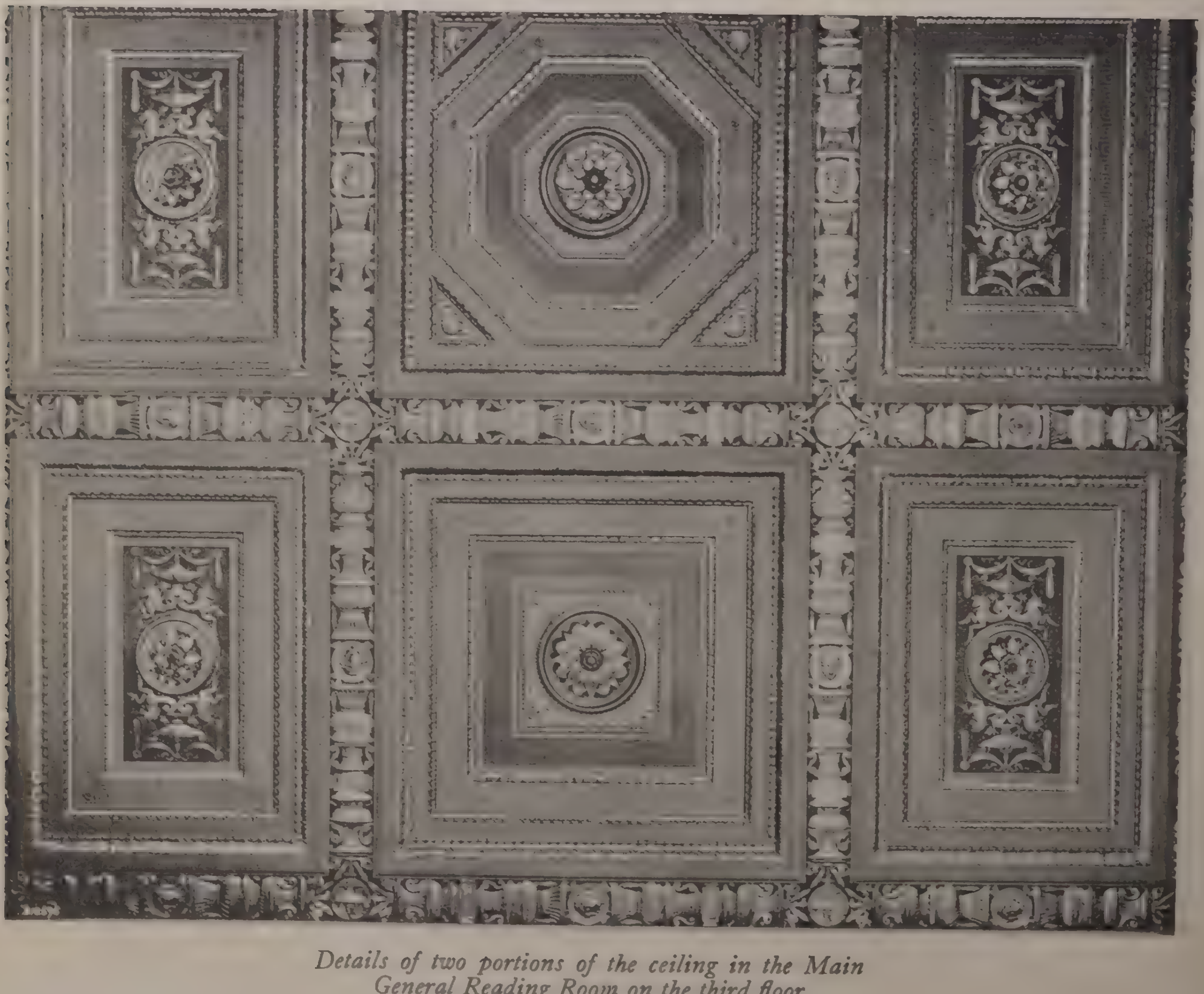
One of the side aisles of the Supreme Court Room. At the right, bronze grilles and gates separate this from the Court Room proper. At the left a central doorway opens upon one of the rear courts

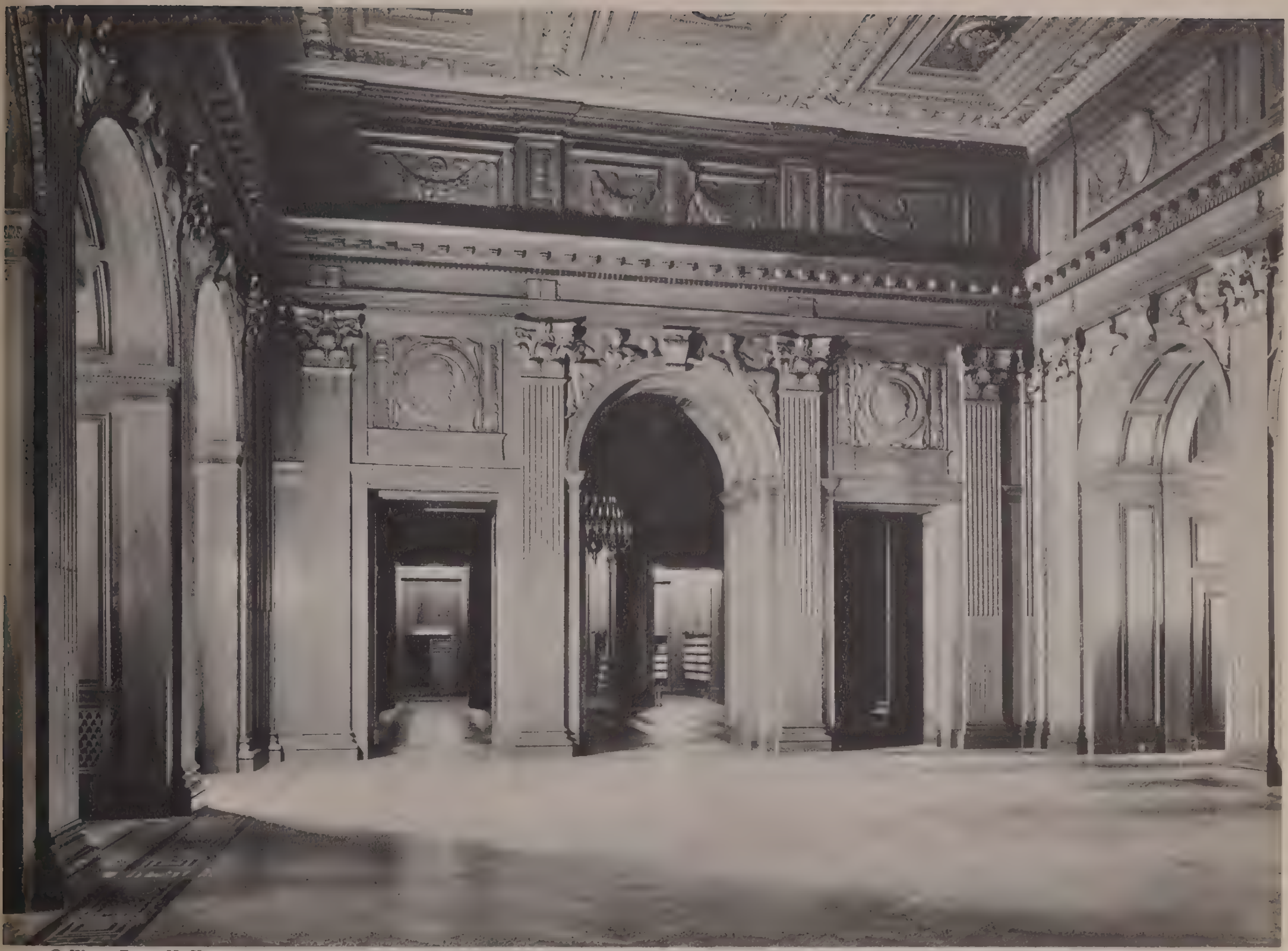


A detail of one of the two self-supporting marble staircases of oval form, running from top to bottom of the main central portion of the building





Details of two portions of the ceiling in the Main General Reading Room on the third floor



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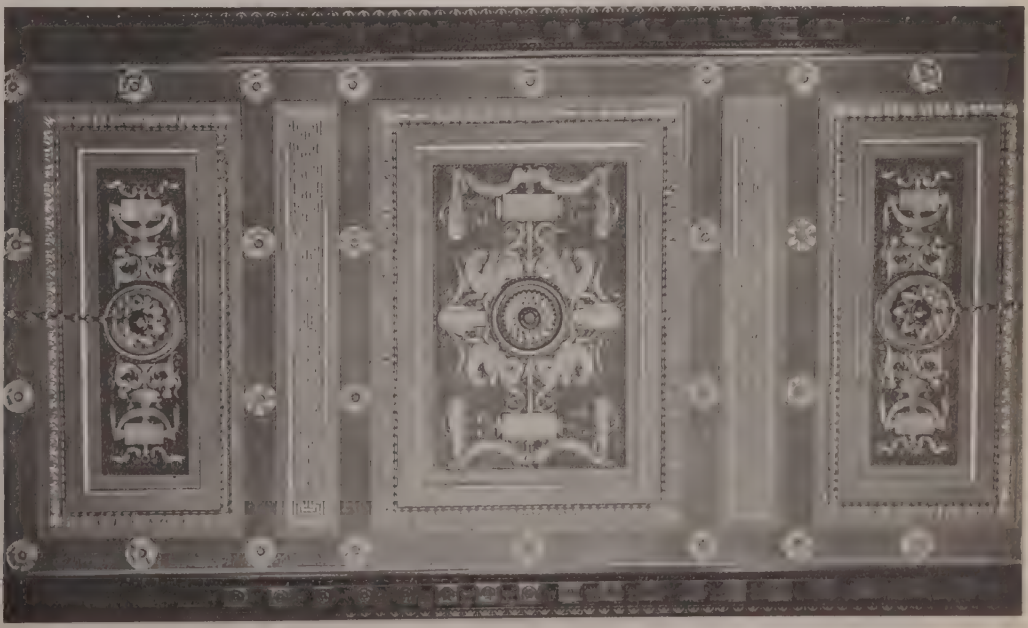
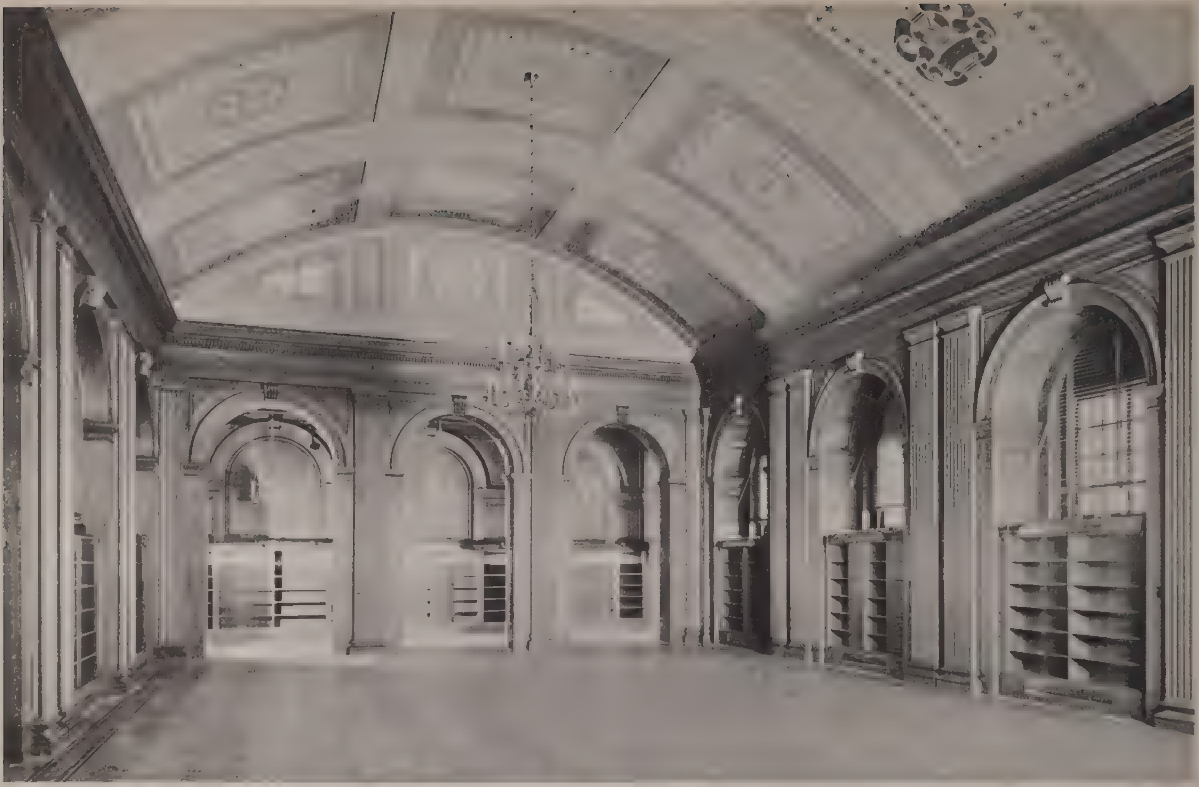
In the Main General Reading Room the walls are of American white oak. Ezra Winter has brought to this room a ceiling rich in color

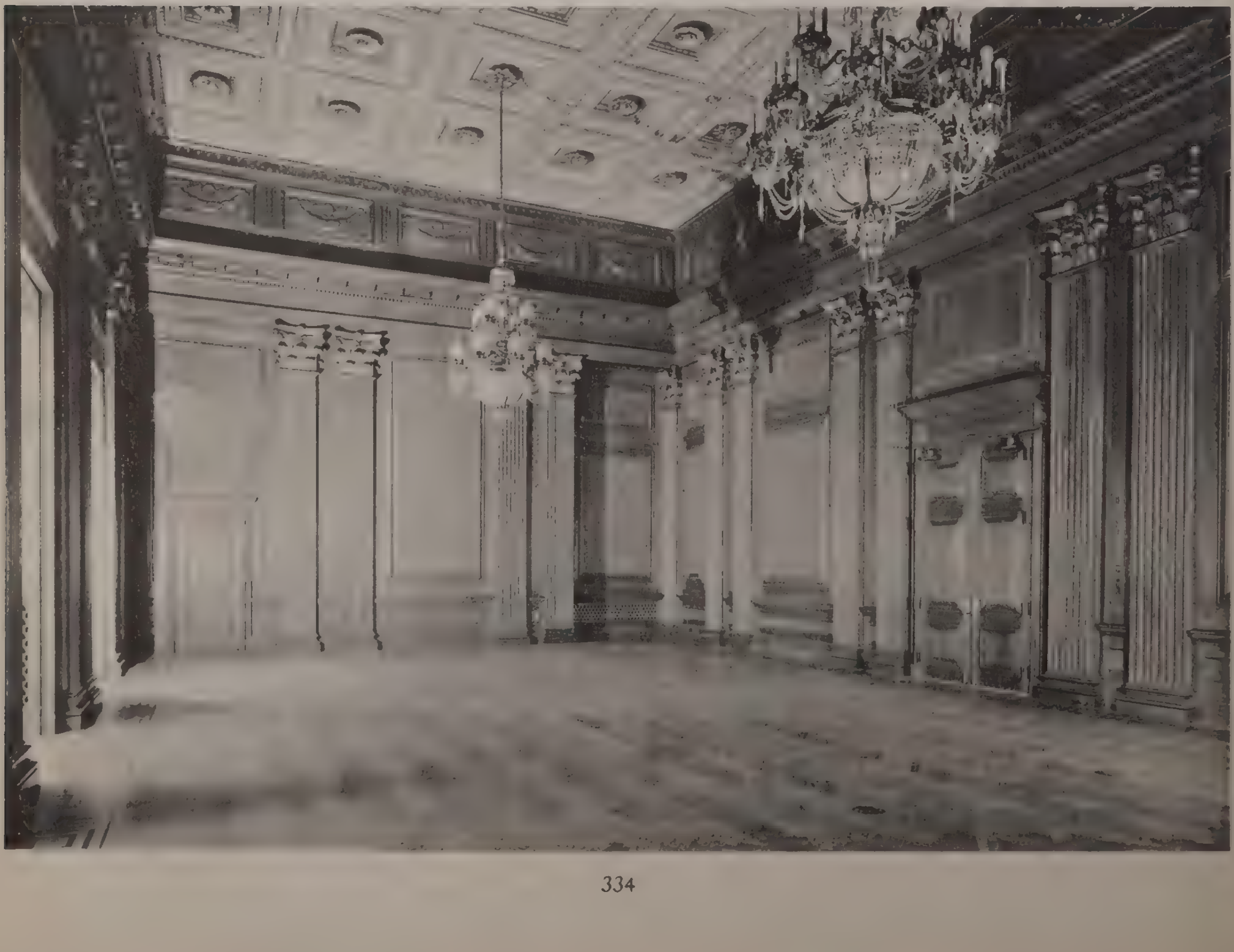


Another detail of the ceiling in the Main General Reading Room



Special Library on the third floor, east end. Walls are of American white oak. The ceiling, decorated by Mack, Jenney & Tyler, is in shades of brown to harmonize with the oak and gilded ornament

One of the two main conference rooms on the first floor on the north side of the building. Woodwork is slightly darkened American white oak. The ceiling, decorated by Angelo Magnanti, has dull gold rosettes in coffer soffits of varying blue and old rose



RECENT DEVELOPMENTS *in* DWELLING CONSTRUCTION

TECHNICAL REPORT NO. 1 (*Continued*), AS PREPARED BY THE TECHNICAL DIVISION, FEDERAL HOUSING ADMINISTRATION

The building industry, particularly in the realm of dwelling construction, is a seething cauldron of experiment and development. What is to come out of the pot, to change our ancient methods, few men have the temerity to predict. Meanwhile, in spite of the old saw—"a watched pot never boils"—architects will want to keep a wary eye out for what may emerge. The Technical Division, FHA, herewith presents the second part of a general survey. The first part, which appeared in the November issue, summarizes the general findings. In this continuation of the report the Technical Division classifies, under headings pertaining to materials, the specific efforts that have come under its notice, directed towards finding new and better types of dwelling construction.

In the issues immediately to follow we propose examining, without prejudice and without protagonism, some of the individual systems now aborning.—EDITOR.

Wood

In spite of its cheapness and ease of handling, the advantages of wood for more complete factory fabrication would not seem to have been realized.

Ready-cut wood frame houses have been on the market for a number of years. These are usually ordered from a catalogue or plan and the seller ships all the wood (and in some cases other materials also), with each individual piece cut to length and size. While a large number of such houses have been built, their market has been mainly in rural localities and small towns and villages where the immediate supply of building materials and labor is small.

Factory fabricated panels have been largely used for portable buildings. These generally follow the usual wood framing methods. Various modifications of this idea are coming into use for factory fabricated houses.

In Sweden, the City of Stockholm, in its housing development, uses large factory fabricated panels, one and two stories high, consisting of two-inch-thick tongue-and-groove planking, wood-chip insulation, sheathing paper, and siding, the panels being made up complete with windows and doors.

While large sheets made of pressed wood pulp, fiber, or of plywood are finding increasing use as interior finishes, the new technique has, until quite recently, generally neglected the use of wood. Now, with the development of thermosetting artificial resin glue and hot presses especially adapted to its use, plywood and other laminated wood construction can be made more durable and weather resistant.

Structural units made of plywood glued to opposite sides of a wood frame develop much greater strength than nailed-up panels having the same size members. Such construction utilizes the "stressed covering" principle used in aeroplane construction, and permits of much lighter construction. Such units in large panels are used for the structural enclosures of buildings, forming, either in connection with steel framing or without other framing, the walls, floors, and roof with the plywood acting as interior and exterior finished surfaces if desired. Insulation is usually included within the units.

Structural units may also be formed of plywood panels and strip-steel channels, the flanges of the channels being restrained in grooves in the edges of the plywood.

The objection raised against wood is that, unless treated, it is combustible, subject to attacks by rot and termites, and it shrinks and warps. Much work is being done today in the field of wood preservation to overcome these objectionable features, but the durability of such treatments and of the synthetic resin glues remains to be proven.

Aladdin Company, Bay City, Mich.; Louis Bossert & Sons, Inc., Grand Street and Newton Creek, Brooklyn, N. Y.; Bennett Homes & Lumber Co., Inc., North Tonawanda, N. Y.; International Mill & Timber Co. (Sterling System Homes), Bay City, Mich.; Lewis Manufacturing Company, 23d and Michigan Avenue, Bay City, Mich.; National Mill & Lumber Company, 400 High Street, Oakland, Calif.; Pacific System Homes, 5800 South Boyle Avenue, Los Angeles, Calif.; Sears Roebuck & Company, Chicago, Ill.; Tumwater Lumber Mill Company, Olympia, Wash. Ordinary wood frame construction of the ready-cut type.

Dally Construction & Engineering Co., Lloyd Building, Seattle, Wash. Structural enclosure of glued-up plywood structural units joined by splines. Light roof trusses of wood using timber connectors.

Forest Products Laboratory, U. S. Department of Commerce, Madison, Wis. Structural enclosure of glued-up plywood structural units, joined by splines. Experimental.

Haskelite Manufacturing Corp., 208 West Washington Street, Chicago, Ill. Structural enclosure of plywood. Inner and outer walls, floors, and ceilings held together and stiffened by 18-gauge strip-steel channels and "I's" whose flanges fit into grooves in the edges of the plywood sheets.

Hodgson Company, Boston, Mass. Structural enclosure of panels made of wood frames covered with a wood finishing material on one side and insulation board on the other. Additional insulation and waterproof paper may be included in the panel. A large number of such houses built over a considerable period of years.

Jasper Wood Products Company, Jasper, Ind. Structural enclosure of glued-up plywood structural units, bolted together.

Corwin Willson, 418 Welch Boulevard, Flint, Mich. Structural enclosure of plywood concealing a wood frame specially designed to transmit loads to corners of building. Asphalt composition pressed onto plywood for floors and exterior surfaces. One house built at Flint, Mich.

Concrete

Many systems have been developed using precast concrete units, usually reinforced. They may be divided into certain general classes as follows:

Systems using bearing units laid up as a masonry wall—usually without reinforcing.

Systems using small thin slab units—up to a few feet long or high—secured to steel, or poured-in-place or precast concrete studs. Similar construction is used for floors.

Systems using large thin reinforced panels—a story high and any width—sometimes an entire wall. Similar construction for floors.

In the two latter systems, flanges are often cast on the units, and these sometimes serve as a form for poured-in-place concrete studs or columns, or act as studs or joists themselves.

Other systems use stucco or concrete applied to metal lath secured to a steel frame or reinforcing members, or to poured-in-place concrete studs or columns, beams, and joists.

The Portland Cement Association's "Report on Survey of Concrete House Construction Systems" contains extensive lists and descriptions of concrete systems, and only those systems not included in that report are listed here.

Dextone Company, New Haven, Conn. Precast slabs resting on precast joists.

John J. Earley, 2131 G Street, N.W., Washington, D. C. Large precast wall slabs fastened to poured-in-place studs. The concrete is made from colored aggregates with the aggregates exposed on the outside surface as a decorative finish. Two houses built near Washington, D. C.

Goldsmith Metal Lath Company, Cincinnati, Ohio. Panels of metal lath secured to metal pans which act as forms for poured-in-place columns, beams, and floor joists and slabs. Stucco and plaster is applied to the metal lath.

Haco Construction, Harry Cole, 4954 West Pine Boulevard, St. Louis, Mo. Small precast slabs with steel channel flanges cast in the slabs, bolted to steel framework.

Insulrock, John F. Downing, 150 Hughes Avenue, Buffalo, N. Y. Precast slabs for inner and outer walls and ceilings used as plaster and stucco base and secured to precast studs and joists.

Makeco, Matthews & Kenan, Smith-Young Tower, San Antonio, Tex. Double bearing walls of large thin slabs tied together.

Arthur H. Olmsted, Rye, N. Y. Precast studs around which concrete exterior wall is poured and to which interior finish is fastened.

J. A. Twachtman, Connecticut Precast Building Corp., Greenwich, Conn. Precast slabs and studs. One house built at Greenwich, Conn.

Gypsum and Other Plastics

Precast gypsum units have been made which are generally similar to concrete units. Gypsum, however, when used in an exterior wall or roof, must be covered with a waterproof finish of other material.

Gypsum is also cast into thin sheets or boards for wall finishes and as a backing for plaster.

Boards or slabs made of insulating material coated with plastics of various kinds, such as asbestos cement, are used for curtain walls, the plastic acting as interior and exterior finish.

Thin sheets of synthetic resinous materials are used for wall finishes.

Reinforced Brick

Steel reinforcing rods are used in the brick joints to increase strength and make possible the use of thinner walls.

One system uses precast brick panels one brick thick, made on the site by laying the brick and reinforcing rods in a form laid horizontally on the ground and pouring mortar in the joints.

In another the brick are laid up in the wall with reinforcing rods in the joints. Reinforced brick columns, beams, and curtain walls are thus formed.

Holsman & Holsman, 140 S. Dearborn Street, Chicago, Ill. Reinforced brick walls made of precast panels.

Judson Vogdes, 334 South 19th Street, Philadelphia, Pa. Reinforced brick columns, beams, and curtain walls.

Foreign Practice

Great Britain

Thorncliffe Iron Works, Newton Chambers & Company System, Sheffield. Exterior of cast-iron plates, combined with a wood frame.

G. & J. Weir, Ltd., Glasgow. Steel sheet on wood frame. A great many of these built.

Atholl Steel Houses, Ltd. $\frac{3}{16}$-inch steel plates with angle and tee frames. About 650 such houses built.

Braithwaite and Company, Telford System, West Bromwich. ⅛-inch steel plates on wood frame.

Doorman, Long & Company, Middleborough. Gunite on wire mesh and steel frame.

France

Forges et Ateliers de Commentry-Oissel, Paris. Cellular concrete blocks combined with steel frame.

Société des Forges de Strasbourg, Paris. Units of corrugated steel sheets on steel frame.

Société de Construction Multicellulaires, Paris. Panels of cellulose, asbestos, and silica on corrugated steel box sections, filled with sawdust insulation with interior panels of sawdust and binder.

Société de Constructions Metallique Fillod, Paris. Story-high steel pans with steel tubing, frame, and sawdust insulation.

M. M. Mopin. Exterior walls of precast reinforced concrete panels secured to steel frame.

Germany

Heinrich Blecken, Duisburg. ¼-inch steel pans and steel framing. Over 700 houses built.

United Upper Silesian Iron Works Company. Steel sheets on steel frame.

Hirsch, Kupfer & Messingwerke, Finow, Hamburg. Copper sheets on wood frame.

The Reflecting Pool

Edwin Bateman Morris

IN the August Reflecting Pool I made what I thought was a very clear statement in regard to the matter of architectural huts dressed up with modern improvements to give them the semblance of civilized homes. I have reread it—a painful process—and I discover that I said I simply did not approve, either from a sociological or from an architectural standpoint, of houses so compact and so tiny that they were neither comfortable, nor decently private, nor in any way suitable for the functions and purposes of a home.

But what do I find? They are still going on building such houses. A news note furnishes the information that in a certain city five men erected the entire steel frame for a residence complete in thirteen hours.

There is another news item which furnishes the information that one of the mail-order firms offers a prefabricated house that can be erected and finished in two weeks. This baby-grand house is not much for size, or number of rooms, or place to receive guests, but it has steel kitchen cabinets, automatic hot water, winter air conditioning, automatic oil-fired heating, complete with humidifying, filtering and forced circulation of air. Just as beautifully equipped as a Pullman car and about as spacious!

It really is difficult to know what to do about the matter. When one takes all the trouble to explain that houses ought to be bigger, then there they go making them smaller. Sometimes I think people don't understand what they read.

* * *

About ten years ago, when in Savannah, a casual acquaintance explained that the only improvement in that city in the previous twenty years was a shuttle-car that ran from the street-car line to the boat. I hope that is true. At any rate, they have now discontinued the shuttle-car, which lends an air of verisimilitude to the item.

Savannah is really one of the most comfortable towns. I don't know how they keep it just like that. It feels as though its citizens had decided that they would like to have it always be like Savannah, and not like any other town.

You walk through a square at intersecting streets, not formally planted (and with signs "Grass! Please!") but gently shaded and arranged so that it is easier to go through it than not. You have the pleasant feeling of having been invited to walk through someone's private grounds.

Then there is a bit of city and presently another square at an intersection of streets, somewhat like the first square. There is no statue to kill its sylvan aspect—no monument to the Second Division or similar cemetery reminder. I think it would be a good idea for these Resettlement fellows who are building up cities to go down and look around Savannah.

I went there to see a Federal building in which a scheme of wall facing had been used that is a very effective Yankee way of getting something really expensive for a relatively small outlay of money.

If you are required to build a marble building, as in the case of this Savannah structure, for the price of a limestone one, make the ashlar of marble and the ornamented work of terra-cotta finished to match marble.

It is the scheme Hornbostle used in the New York State Educational Building, but it is still good—gets better with every trial perhaps. The Savannah building has been constructed for four or five years and it requires the utmost concentration and use of technical experience to make certain which is the terra-cotta and which is the marble.

Care has to be taken in using the two materials in juxtaposition not to let any weight be transferred from the marble to the terra-cotta, as very unfortunate things result, such as chunks of terra-cotta bouncing down to the sidewalk. This did happen in the case of the Educational Building, and to a minor extent at Savannah, in places where the joints were filled solid or some of the lesser steel did a better job of shrinking than the terra-cotta.

I think it would be an excellent idea, next spring or next fall, for a lot of us to jump on a boat and go down to Savannah and plant a tree in a selected spot in one of the squares to commemorate the end of the Depression.

* * *

A nice young fellow, with a degree in architecture from one of the foremost universities, came to see me the other day and made the statement that while he was more than glad to have the job he did have, working alone on minor architectural work for a large institution, he felt that he was stagnating, out of touch with his fellow architects, and making no professional progress whatsoever.

I hastened to tell him, though he could by no means agree with me, that he was, on the contrary, having some of the best months of his educational career, since he was in a position where he could make drawings and see the drawings put into excution, where he could get the three-dimensional feel of structural growth.

This is especially true now with the *bacillus modernus* floating about ready to enter the system of any young unprotected person. The *bacillus* carries with it a high fever and a frenzied urge toward functionalism, which is a word that reads big to youth. The word is forward-looking and pregnant with change, but they are unable really to understand it because they have only the gossip and not the feel of function.

A man who wishes to live healthy with *Moderne* and even to thrive upon it must know functionalism and not merely converse about it. If he desires to prune out illogical forms of the past, he must know the logic of the present. He must have an outdoor knowledge of the qualities and erection possibilities of stones and steel sash, tile, marble, and terra-cotta. *Moderne* is not a thing that can be taught in the schools. When a man begins improvising in any art, he has to have the background, not the mere theory.

BOOK REVIEWS

A HOUSING PROGRAM FOR THE UNITED STATES. Report prepared for the National Association of Housing Officials. Foreword by Charles S. Ascher. 42 pages, 7¾ by 10½ inches. Publication No. 48. Pamphlet binding. Chicago: 1935: Public Administration Service, 850 East 58th Street. 50 cents.

It will be recalled that in 1934 three distinguished European housing experts came over, and, with Henry Wright and Ernest J. Bohn, visited nearly forty cities to study our housing problems. Over twenty-five thousand copies of a summary of their findings have been distributed. Here, however, is the complete report as made to the National Association of Housing officials.

ART IN NEW YORK. A Guide to Things Worth Seeing. By Florence N. Levy. 135 pages, 3½ by 6¼ inches. Illustrated from photographs. Pamphlet binding. New York: 1935: The Municipal Art Society. 30 cents.

CHECK LIST OF CONSTRUCTION, CONSTRUCTION MATERIALS, AND EQUIPMENT. By George W. Spaulding. 323 pages 7 by 10½ inches. Semi-looseleaf flexible binding. Denver: 1935: George W. Spaulding, 814 East 18th Avenue. $7.

This is not a skeleton specification, nor a list of selected trade names, nor an attempt to indicate the superiority of one material over another. It is a comprehensive check list, conveniently arranged with alphabetical and classification tabs, designed to be used as a reminder of items to be considered and also for final checking purposes against specifications, estimates, or bills of materials.

THE NEW ARCHITECTURAL SCULPTURE. By Walter Raymond Agard. 124 pages, 6 by 9¼ inches. Illustrations from photographs. New York: 1935: Oxford University Press. $3.

Professor Agard, who is in the Department of Classics at the University of Wisconsin, has interested himself in the sculpture of today which is directly related to buildings, rather than to sculpture which falls frequently in the line of classic, Renaissance, and Gothic prototypes. Professor Agard includes also some of the modern memorials. In a word, the book concerns itself with the closer relationship of architecture and sculpture along the lines of work that is being done by such men as Lee Lawrie, Eric Gill, Rene Chambellan, Henri Bouchard, Hans Panzer, and others.

BETHLEHEM ALLOY AND SPECIAL STEELS —Bars, Billets, Blooms and Slabs. 375 pages, 6 by 9 inches. Illustrations from photographs, microphotographs, and diagrams. Bethlehem, Pa.: 1935: Bethlehem Steel Company. $1.

In these days when new alloys of steel are bringing into use a host of what are practically new metals, this volume is particularly timely and helpful. It is a scientific treatise dealing with the various grades of steel; the particular kinds of steel used for specific purposes; testing and properties of the metal; the working of steel; and many reference tables, definitions, and other concise information that will insure the volume an easily accessible place on the shelves of the architect's and engineer's working library.

BEHAVIOR OF HIGH-EARLY-STRENGTH CEMENT CONCRETES AND MORTARS UNDER VARIOUS TEMPERATURE AND HUMIDITY CONDITIONS. By Louis Schuman and Edward A. Pisapia. 25 pages, 6 by 9¼ inches. Illustrations from graphs. Research Paper RP799. Pamphlet binding. Washington, D. C.: 1935: U. S. Department of Commerce. 5 cents.

A COMMUNITY-PLANNING PRIMER FOR ILLINOIS. By Karl B. Lohmann. 24 pages, 6 by 9 inches. Vol. XXXII. No. 50, University of Illinois Bulletin. Pamphlet binding. Urbana, Ill.: 1935: University of Illinois.

SIMPLIFIED DESIGN OF CONCRETE FLOOR SYSTEMS. 72 pages, 6 by 9 inches. Illustrations from photographs and diagrams. Pamphlet binding. Chicago: 1935: Portland Cement Association.

A concise compilation of data for use in the design of concrete floor spans of various types, together with recommendations for live loads, tables of building material weights, etc.

THE STRENGTH OF MONOLITHIC CONCRETE WALLS. By Frank E. Richart and Nathan M. Newmark. 36 pages, 6 by 9 inches. Illustrations from diagrams and photographs. Bulletin No. 277. Pamphlet binding. Urbana, Ill.: 1935: University of Illinois. 40 cents.

ART IN THE U. S. S. R. Edited by C. G. Holme. Introduction by A. Y. Arosev. 138 pages, 8¼ by 11¼ inches. Illustrations from photographs and drawings, some in color. Printed in Great Britain. New York: 1935: The Studio Publications, Inc. $4.50, cloth; $3.50, wrapper.

A survey by *The Studio* of the arts in Soviet Russia; architecture, painting, sculpture, poster and cartoon, theatre, cinema, and handicrafts. To each section a Soviet authority contributes an article describing the changes that have taken place in these arts during the Soviet régime. The section on architecture makes clear the fact that every architectural production in the U. S. S. R. is now carried out in accordance with a unified general plan. Most of the new architecture, of course, consists of public buildings and residential groups. In this category of shelter, the Soviets neither build skyscraper tenements nor individual cottages, but rather several types of residential housing.

BETTER PRACTICE

By W. F. Bartels

ELECTRICAL WORK

1—GENERAL

ONE of the truisms in the building trades is that "you find out mistakes at your own expense." Much of this useless expense can be avoided if electrical specifications are not copied verbatim from previous jobs. This does not mean that certain helpful general clauses should not be used, but the architect should try to visualize and then accurately describe the entire electrical work of the building.

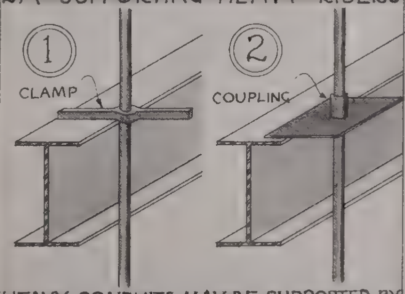
The electrical contractor must be made responsible for turning on and off the current during construction. This will include turning current on for motors, pumps, and other apparatus and equipment. The electrician must be made responsible for all apparatus and equipment that he switches on; too often electricians will burn out motors, bearings, and other parts when not made responsible for them. The electrician must also be made responsible for the maintenance of temporary light and power, and the lighting of bridges if these are necessary. He must comply with the rules of the Electrical Code, as well as with the local ordinances. The architect should ascertain to what place the utility company brings in their service. He should inform the electrician whether or not he must remove his own rubbish and whether or not he is to do his own cutting and patching. It is desirable that the electrician do all his own cutting for the proper installation of his work, but in patching or repairing the damage done, he had better employ the services of the contractor whose work is so damaged. The electrician should be informed whether or not the owner will provide a watchman. But even if one is provided, it should be definitely stated that despite this the owner will not assume the liability for the loss of, or damage to, tools, materials, personal property, etc.

* * *

2—SPECIFICATIONS

The architect should remember that low maintenance costs are the result of good wiring and good insulation. Too often the phrase is used: "The wiring shall be of sufficient size to carry the load intended for it." The architect should make it his business to find out what size is required, and call for it to be installed. The complete specification should be ready for the electrician when the job is first started. In many cases work is held up because lines that are to be buried in concrete cannot be placed because of lack of information. A good grade of wire should be called for in order that proper insulation may be obtained. If the job can afford it, it is more desirable that conduit work be used rather than the more common armored cable. The cable or conduit should be properly supported as called for in the code, and the heavy risers be supported by regular hangers. In running heavy risers in steel or concrete buildings, they may very readily be supported by means of a plate pierced with holes the size of the risers. The risers should be joined immediately above the plate by a coupling which supports them. The plate may rest on the concrete of iron beam (Fig. 2A).

2A SUPPORTING HEAVY RISERS



HEAVY CONDUITS MAY BE SUPPORTED BY ① CLAMP OR ② PLATE RESTING ON BEAM

The architect should make sure to specify everything that is to go in the job. Twin base or wall outlets should be included. Pull chains should be eliminated as far as possible. Some local ordinances go so far as to prohibit pull chains in bathrooms. Convenience outlets should be properly spaced, the interval depending on the type of room. The desirable dimensions for these may be obtained from any of the electrical manufacturing companies. Transformers should be called for in place of the usual dry-cell batteries for bells, annunciators, etc. Flush plates, while a small item in themselves, should be ordered to harmonize with the room in which they are placed; there are many kinds available. Provision should be made for unit prices on work done and that not done, so that at the end of the job there is less conflict about extras and allowances. Besides furnishing all certificates and approvals, the contractor should be required to furnish 10 per cent cartridge fuse containers with 25 per cent refills and 25 per cent screw plugs. It might be well for the architect to call for the approval by his superintendent of the position of panel boxes, fuse boxes, bells, annunciators, etc., in order that they will come out properly in relation to kitchen cabinets, etc.

* * *

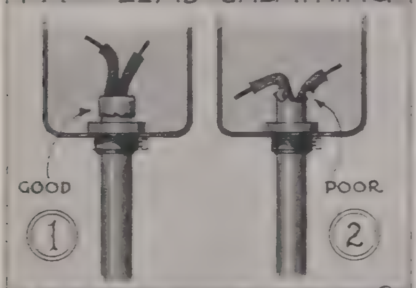
3—PLANS

Plans for electrical work, it seems necessary to add, should be so laid out that switches will be conveniently placed. Switches should be provided to control wall brackets. Doors should swing so that switches will not be placed behind them, or in other equally inaccessible places. Likewise, radiators should be shown, so that on completion of the electrical work it will not be found that base outlets are behind them.

Base-plugs and wall outlets are doubly useful when of the duplex type. In locating basement light outlets, it is important that one be placed near the water gauge of the boiler so that there will be no excuse for letting the water level become dangerously low. Lights are a great boon in closets that do not have a reasonable amount of natural light when the doors are open. Fuses or circuit-breakers should be placed in convenient and handy places, such as in foyers, so that in case of a short circuit they may be readily accessible. In the panel box there should be a typed list showing which rooms are on each circuit so that in replacing a burned-out fuse a series of experiments is not necessary. No panel boxes should be located in stair halls, fire towers, etc., nor should they be allowed on temporary walls, such as might occur in lofts or office buildings. It is desirable to use at least two circuits for each large room or apartment, and it is preferable not to have base or wall outlets on the same circuit as the fixed lights.

The service switch should be located in an accessible place. In private houses it is sometimes desirable to have the electric meter readable from the outside. Some owners often desire to have the meter in a small room off the cellar, but it must be remembered that the electric meter must be located at least six feet from the gas meter. Independent break-down service should be shown if required, as it may be in hospitals, schools, and other institutions. When transformer vaults are shown, it might well be noted on the plans or in the specification that they are to be for the building service only, so that the electric company does not utilize the owner's space to provide some one else with service.

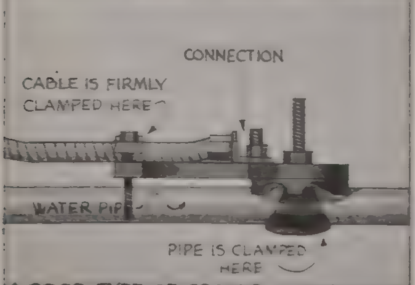
4-A LEAD SHEATHING



LEAD MAY CUT INTO WIRES AS IN ② UNLESS IT IS TURNED BACK, AS IN ①

Where remote-control switches are required, such as for movie booths, oil burners, etc., these should be distinctly noted on the plans. The architect must give the location of all furred ceilings, etc., so that the electrician will know definitely where his outlets are to be placed. Adequate sizes should be specified and shown on the plans, as too often long runs are made with under-sized wires. The architect might more readily realize this if he thought to compare the flow of electric current with water in a garden hose. A long length means comparatively little output at the end due to friction, etc.

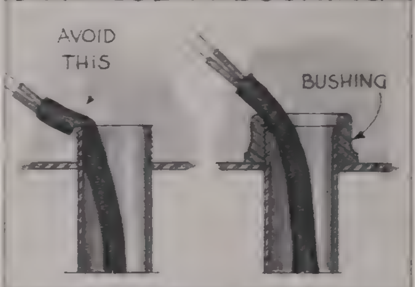
4-B GROUND CONNECTION



A GOOD TYPE OF GROUND CONNECTION SHOULD ALWAYS BE SPECIFIED

All switches should be 4′ 6″ from the floor. A good height for wall brackets in domestic work is 5′ 9″ to center from floor. Switches should not be located where there is danger of any one receiving a shock, such as in operating a switch while immersed in the bathtub.

6-A USE A BUSHING



BUSHINGS SHOULD BE USED AT ALL BOXES TO PREVENT CUTTING OF WIRES

Raceways should be installed in all cases where it is probable that individual electric service may be desirable or necessary, such as in offices. However, raceways should be of such a type that the circuits may be kept to themselves by means of a barrier. It is not allowable to place low-voltage wires, such as those for telephone annunciators, etc., in the same compartments with lighting wires.

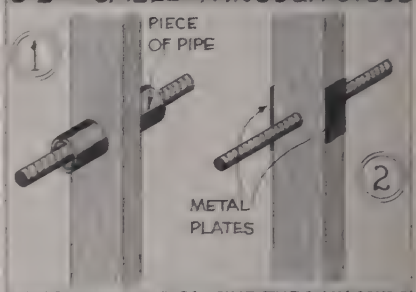
The architect should call for the contractor to submit drawings for circuit wiring, riser diagrams, and detailed arrangement of panel boards. He should carefully check these drawings, because they often bring to light certain details he may have overlooked in his own floor plans.

* * *

4—MATERIALS

The quality of materials going into a job is important. The conductivity of the copper, the quality of the rubber, and the type of insulation all are important. Lead sheathing is absolutely essential if there is apt to be any moisture present. The improper connection of this cable in the box may damage the rubber insulation. To avoid this, the lead is rolled back on itself (Fig. 4A). In conduit work the type and size should be specifically mentioned. Whether the conduit is to be black or galvanized should be specified. That buried in concrete must be galvanized. Stranded wires are preferable, and are required where larger sizes are needed. Outside lights should have moisture-proof outlets, lead-covered wires, and moisture-proof glass covers when erected outside. Moldings of metal for wire raceways should be submitted for approval. Bells for doors, dumbwaiters, etc., should be shown. Conduits placed in damp places should be painted. Proper ground connections should be specified. One of the more desirable types is shown in Fig. 4B.

6-B CABLE THROUGH STUDS



ARMORED CABLE PASSING THROUGH STUDS MUST ALWAYS BE PROTECTED AGAINST NAILS

* * *

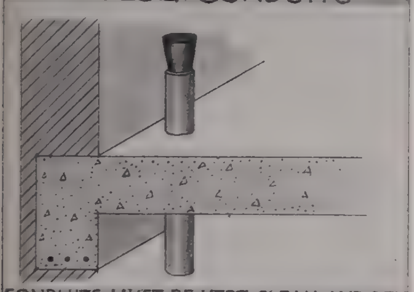
5—SIZES

In figuring mains and feeders they should never be computed for less than the full load. The feeders should also be large enough to take care of normal future loads.

In plumbing, a percentage of the total possible load is figured for the water supply to be used; but it must be remembered that there is only inconvenience at stake should there be no water; with electricity figured undersize there is danger. The false economy of using small wires cannot be stressed too much. Where the run is long, a size larger than normal should be used, particularly where the distance is 80′ or more. Where power loads or loads requiring high starting current are present, separate circuits should be provided. Extra conduits should be installed in stores which may be used as barber shops and in apartments which may be used by physicians, dentists, etc.

Provision should also be made for telephone wires. It is preferable in low-tension work to use the same size wiring as for the electric work. It must be remembered that there is also considerable inconvenience entailed when the low-voltage system is out of order, as well as when the high-voltage system does not work.

6-C PLUG CONDUITS



CONDUITS MUST BE KEPT CLEAN AND DRY BY BEING PLUGGED AS SOON AS ERECTED

6—WORKMANSHIP

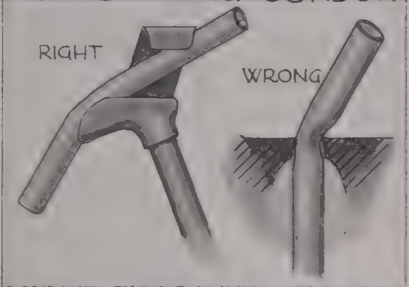
Provided proper materials are used, the success of the installation of an electric system depends on the workmanship. The architect should therefore call for and permit only first-class labor to be used on his job.

In using BX cable, difficulties generally originate at the boxes, due to improperly spliced wires or poor insulation. Proper bushings should be installed in the boxes to prevent damage to the wires (Fig. 6A). No loose cables should be allowed in shafts or similar places. This is particularly true in repair work, where the slip-shod electrician will take the easiest course regardless of future safety from short-circuits.

Where BX cable is run through stud or beam where there may be danger of nails penetrating it, the cable should be protected by means of pipe or iron plates (Fig. 6B).

Conduits should be installed as a complete system and no splices allowed within them. Where conduits are used in reinforced concrete arches, they should be placed above the reinforced mesh and not under it. Then, too, they may be placed between sleepers if these are present, or along the walls in a chase if possible. All electrical lines should be kept clear of plumbing and heating lines. The conduits should be kept clean and dry by being capped or suitably plugged as soon as they are installed (Fig. 6C). Conduits should be securely joined to boxes. In conduit work, only such bends or offsets as are absolutely necessary will be permitted. Where they are required they should be made by an approved bending machine or hickey, and in no case should they be allowed to be made with a pipe tee or vise. Bends should have not less than a 3½" inside radius (Fig. 6D). Conduits should be cut with a hacksaw and have the ends reamed after threading, instead of having the burrs brushed off with nippers as many mechanics are prone to do (Fig. 6E). All connections should first be made mechanically secure without solder, and then should be soldered. Only graphite should be used to ease the pulling of the wires in conduits. The use of grease should be strictly prohibited, because it will cause the eventual rotting of the covering and of the rubber. Cables in vertical risers should be held by cone-shaped plugs made especially for this use (Fig. 6F).

6-D BENDING CONDUIT



CONDUIT SHOULD ALWAYS BE BENT WITH A HICKEY, NEVER A PIPE TEE OR VISE.

Before acceptance the architect should call for a complete test of the system to prove that it functions properly and is free from grounds and shorts. At the time the test is made it would be well for the architect to have one of his men check up on the system to see that all outlets have been installed, since it is not uncommon for contractors to leave jobs without completing all their work.

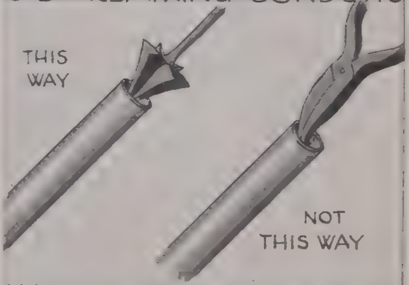
7—PRECAUTIONS

Where outlets are provided for ironing-boards, such as in the basements of apartment houses, care should be taken so that the cords will not come in contact with a wet or damp floor; in other words, a wood floor should be provided.

Where ground clamps are put on water lines, they should be installed on the street side of the meter or valve. Failure to do this may result in a ground not being provided when the water supply is disconnected for the winter (Fig. 7A).

Electric grounds should never be attached to gas lines. While the architect should call for a test to be made to prove that the work is free from grounds, some electricians are not above employing a subterfuge that will make the splicing of an armored cable difficult to detect. This is done by connecting the armor of the cable with a wire (Fig. 7B). Nor should the architect be fully satisfied without further investigation when a ground is suddenly eliminated by the electrician. This he often does by reversing the polarity, and in reality the evil has not been corrected (Fig. 7C).

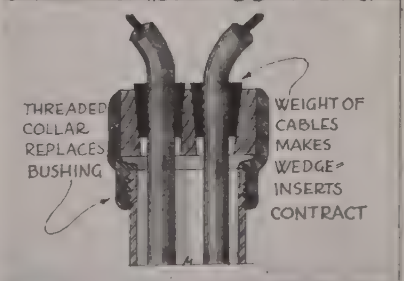
6-E REAMING CONDUITS



ENDS OF CONDUITS SHOULD BE REAMED WITH A REAMER, NOT MERELY SCRAPED

Where an architect has called for two lights on one circuit to be controlled by individual switches, and finds that this has not been done, he must be very wary when the electrician suddenly informs him that he has taken care of the matter. Probably all that has been done is to take

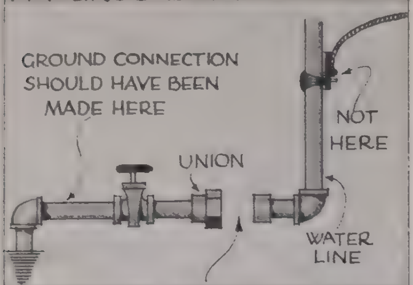
6-F CABLE SUPPORT



THREADED COLLAR REPLACES BUSHING
WEIGHT OF CABLES MAKES WEDGE-INSERTS CONTRACT

CABLES IN LONG VERTICAL RUNS ARE SUPPORTED BY SPECIAL PLUGS

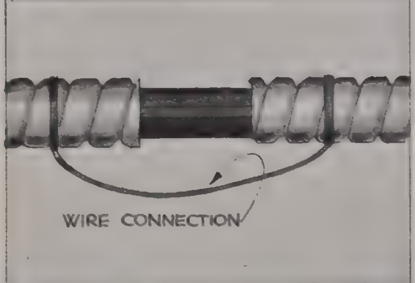
7-A GROUND ON WATER PIPE



ELECTRICAL GROUND CONNECTION IS BROKEN WHEN WATER IS DISCONNECTED

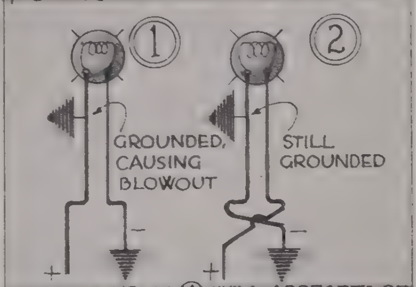
both switches off the "hot leg" (the positive wire), and merely ground the negative wire of the fixtures to the box (Fig. 7D). Besides being decidedly poor practice, it is dangerous as well. The architect must also beware where a receptacle is installed through a switch if the receptacle is installed after the fixture. Some electricians unworthy of the trade may carry the "hot leg" down to the receptacle, and, instead of connecting the neutrals, ground the receptacle to the outlet box. This again is undesirable and unfortunate (Fig. 7E).

7-B SPLICED ARMORED CABLE



BREAKS IN CABLE ARMOR ARE HARD TO DETECT WHEN WIRED TOGETHER THUS

7-C REVERSING POLARITY

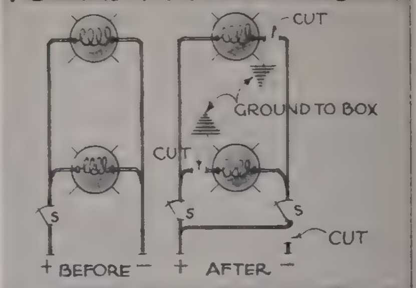


THE GROUND, IN ① WILL APPEAR TO BE ELIMINATED IN ② BY REVERSING POLARITY

8—FIXTURES

Even though the architect calls for the fixtures to be furnished by the owner, and stipulates a certain amount to be set aside for the fixtures, it should be definitely set forth that the electrical contractor shall hang them or allow a certain stipulated amount for not doing so.

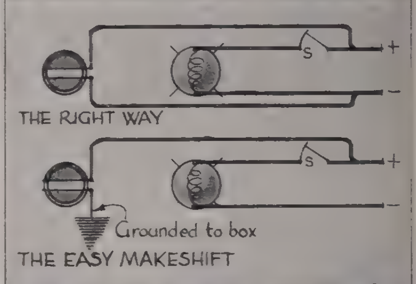
7-D "INDIVIDUAL" SWITCHES



SWITCH INSTALLED WITHOUT REWIRING AN EASY MAKESHIFT, VERY UNDESIRABLE

On large jobs the metal gauge of the fixtures should be stated. It should be specified whether they are to be cast or spun. So too, when fixtures are made of compositions, the percentages of the alloys should be definitely mentioned.

7-E INSTALLING NEW OUTLET



BE SURE THAT BOTH WIRES ARE CARRIED TO NEW OUTLET, NOT SINGLE WIRE ONLY

For the convenience of those who wish to refer occasionally to specific sections of the Better Practice series, these were published as follows:

Brickwork	February, 1934
Carpentry	September, 1934
Clay Products, Cinder and Gypsum Blocks	July, 1934
Dampproofing, Waterproofing and Calking	July, 1935
Doors and Windows	June, July, 1935
Excavation	June, 1934
Flooring	August, 1934
Granite, Stone, Marble and Slate	March, 1935
Hardware and Glazing	August, 1935
Heating	November, 1934 December, 1934
Kitchen Specialties	October, 1935
Painting	April, 1935
Plastering	March, 1934
Plumbing: (A) Roughing	October, 1933
Plumbing: (B) Water Supply	November, 1933
Plumbing: (C) Hot Water; Covering; Plans	December, 1933
Plumbing: (D) Chiefly About Fixtures	January, 1934
Renovations	November, 1935
Roofing	January, 1935
Steel and Miscellaneous Iron	February, 1935
Tiling	April, 1934
Wall Board	May, 1935

The Editor's Diary

Tuesday, October 1.—Philip Sawyer packs a lot of wisdom into a few words when he says: "If a designer is convinced that his allotment of the divine afflatus will enable him to create unquestioned masterpieces, he should lock himself in a room as a protection from all outside influences, and produce the said masterpiece. If, however, he has any doubts as to his ability to do this, it would seem only the part of wisdom for him to look about the world a bit to see what other good men have done."

Thursday, October 3.—Samuel Yellin was telling me today of a fine old fourteenth-century lock that had come into his possession, lacking, however, its key. He made a key for it, and was surprised and gratified to find that every spring in the lock's action was as effective, apparently, as it had been five hundred years ago. "That," said Samuel Yellin, "is what I would honor by the name 'Functionalism.'"

New York City is fairly bristling with new bars and new restaurants. This evening I went up to Madison Avenue at 59th Street for a preview of the new Longchamps which Winold Reiss and Albert C. Schweizer, in collaboration with Louis A. Abramson, have just produced. As new as this morning's newspaper, its brilliance and sparkle depend not so much on the clichés of bright metal, rounded corners, and the like as upon an intrinsically interesting combination of American Indian motifs, of which Weinold Reiss is such an able interpreter.

Saturday, October 5.—The Simonds Saw & Steel Company built a windowless factory; Sears, Roebuck, a windowless department store; and now the Hershey Chocolate Corporation is to put up a factory without windows. They are very thoroughly convinced of the reasonableness of such a structure from many viewpoints: the lack of windows makes for cheaper heating; the equable lighting made possible by mercury-vapor and incandescent-filament lamps, approximating daylight; and the complete utilization of floor space without regard for outside lighting. They are even going to have a series of signals that appear over the clock, announcing to the workers what the weather is outside.

Air conditioning continues to march upon us with all the trappings of a conqueror. Almost overnight it has become perhaps unthinkable that one would design enclosed space for public occupancy without adequate provision for air conditioning. It has its bright side—one thinks of the happy day when, in the subway, one will be required to breathe only laundered air. And yet the prospect has also its dark side—I should hate to think that we were coming into a time when all the air we breathe will be 99 per cent pure. What is going to become of us if they take away some of the smells which make life decidedly better worth living: burning leaves on a crisp autumn day; the salt tang off the tidal basins; the freshly upturned spadeful of earth in the spring; the smoke from an apple-wood log on the hearth; the fragrance of old manure being spread on the lawn; the roasting of chestnuts over charcoal; the smell of the impalpable dust from the field where grain is being cut? Of course, the air-conditioning manufacturers may anticipate our unwillingness to lose some of these enjoyable accompaniments to air by incorporating a drop of whatever essence we may prefer at the moment, though I should think it might be rather difficult to create synthetically what we have outdoors for the sniffing.

Monday, October 7.—Meanwhile, Mr. H. G. Wells says that the city of the future, with the exception of a few skyscrapers, will be half-subterranean. Windows, if and when used, will be of flexible glass. Interiors will have artificial sunlight and manufactured climate, and will be completely soundproof. All of which does not seem to be going very far into the future in comparison with some of Mr. Wells's previous prophecies, since we have most of these things now.

* * *

Wednesday, October 9.—Concerned by a rumor that Clarence Stein had abandoned all of his activities in connection with housing, I lunched with him today to learn about the facts. Far from giving up his interest in housing, he tells me that the resignation of R. B. O'Connor and himself from the Red Hook architectural group appointed by the New York City Housing Authority was prompted by the thought that this action might further the cause of housing.

The resignations were offered to Commissioner Langdon Post because of a combination of circumstances which, in the opinion of Stein and O'Connor, made it impossible for the architects of the group to produce satisfactory results. Some of these circumstances were: P.W.A. refuses to sign a contract with the architects now, nor will they indicate what form of contract they may eventually sign; P.W.A. will take no responsibility for the cost of producing drawings, though these drawings must be completed, under the President's executive order, in time for letting contracts by December 15, 1935; the Housing Authority will not make itself responsible for more than a limited part of the cost of preparing drawings, and, moreover, it would probably be necessary to prepare the drawings with draftsmen from the relief rolls—a handicap of uncertain scope; in spite of the short time for the preparation of drawings, these are required to be on linen and inked, a method that is not customary in private practice; even if drawings could be made within the time limit, the architects are not permitted by P.W.A. to supervise the work even to the extent of seeing that it is carried out in appearance in accordance with the design.

This whole experience is corroborative evidence that housing cannot properly be carried out as an emergency measure; it should be a long-range, carefully studied, and systematically promoted effort.

Saturday, October 12.—William Orr Ludlow's article, "Are We Building too Well?" seems to have roused a number of his readers to comment. Anthony F. Inserro, a New York architect, feels that practically all of the blame should be laid upon antiquated building codes, and that there should be some way of putting an official stamp of approval upon new materials and methods that will avoid the delays and other red tape involved in carrying a question up to the Board of Appeals in the Building Departments.

Monday, October 14.—A talk with D. C. O'Connell reinforced my conviction that the designers of America must come from the ranks of those trained in architecture. O'Connell, who works in the studios of Lurelle Guild, designing everything from silver spoons to hot-water boilers, says that the most difficult phase of the work is the abrupt changes in scale required by the variety of products. The man who can turn readily from the job of designing the exterior appearance of an electric locomotive to that of a bit of table glassware, must necessarily have a grounding in the fundamentals of design that, in the present makeup of the world, is to be had only in the educational system we have evolved to create architects.

Wednesday, October 16.—Robert D. Kohn is telling a story of a recent experience in Paris, which has a real significance for the architectural profession here. He called on the telephone a well-known French architect to ask for an appointment, and was told that the architect had so many appointments that he would not be able to see him until late in the afternoon. When Kohn finally reached the inner office, he ventured to say that he was glad to know an architect so busy—what was it, architectural jobs or outside activities that had filled his day? "Interviews with clients, ten or twelve in all," was the reply. It seems that the architect had developed a practice not unlike that of the general practitioner in medicine. The clients were entirely free to consult him about the painting of an outbuilding, the laying of a small concrete pavement, the renewal of Venetian blinds—all minor problems which, of course, entailed only a minor fee.

* * *

Saturday, October 19.—Upon seeing the reproduction of the painting which received the thousand-dollar prize at the Carnegie Exhibit in Pittsburgh, one casually muses upon the reasoning and somewhat startling preferences of juries. It is difficult to find, in a representation of a young, dark-skinned couple seated on an Empire sofa—much in the manner of a honeymoon photograph of the late 90's—the elements of a great work of art. However, our own architectural juries do some inexplicable things too, for I see that the small house which has been chosen most frequently from among the results of the recent G. E. Small House Competition, is a house by Royal Barry Wills which, at the hands of the eminent jury, received neither prize nor honorable mention.

Monday, October 21.—Hobart Upjohn, as president of the New York Chapter, A. I. A., has what seems to me a great scheme for the Chapter's activities during the coming year. We do a lot of talking about how impossible Manhattan Island is getting to be as a place in which to live, but apparently, as Mark Twain said of similar endless discussion about the weather, "nobody does anything about it." Hobart Upjohn thinks it is possible for the Chapter to tackle the problem as a whole, leaping all hurdles of law, tradition, various entrenched interests, etc., to make a workable plan for this island. Of course, probably nothing will ever be done about carrying out the plan, but we shall have some fun in making it, and besides, isn't it the sort of thing the public has a right to expect of the profession?

Tuesday, October 22.—Harry Francis Cunningham is most apologetic for having said in his appreciation of Harold VanBuren Magonigle that the latter was the first Doctor of Architecture in America. The degree was conferred upon him by the University of Nebraska in 1931. However, it now appears that our good friend Irving K. Pond was honored with the degree of Doctor of Architecture by the University of Michigan in 1930. At any rate, the matter of chronology is decidedly less important than the fact that both men were so fully deserving of the honor.

Thursday, October 24.—I dropped in at a regular meeting of the Architects' Emergency Committee today after lunch to join in the cheering when the Committee presented Julian Levi with a beautifully engrossed expression of the Committee's appreciation of his loyalty, devotion, and unselfish services in the interests of the unemployed draftsmen during the last few years.

Incidentally, as I listened to the reading of a summary of the Committee's routine activities by its present chairman, Lucian Smith, there appeared the best news I have heard for many a long day. The Emergency Committee has had registered on its rolls for assistance, in regular or made work, over 4500 draftsmen and architects. The enrollment has now dwindled to 164, of which number not one man is in need. In other words, the emergency, in so far as architectural draftsmen in the Metropolitan District is concerned, seems to be over. This does not mean that the Committee's work is at an end, by any means, for most of its activities now, instead of finding jobs for draftsmen at their request, consists in finding draftsmen for jobs at the architect's request.

* * *

Lawrence Kocher brought Le Corbusier to the Architectural League for luncheon today, when I had the pleasure of meeting him. The man whose name has been of such significance in the modern movement is here in America for a lecture tour under the auspices of the Museum of Modern Art. Since Le Corbusier knows little English and Lawrence Kocher little French, their continued conversation together at luncheon provoked considerable discussion as to how they were making themselves understood—possibly through the use of some new international language.

Tonight Le Corbusier, whose real name is Charles-Edouard Jeanneret, lectured in French at the Museum upon his theories of building and town planning. My own difficulty in following his French was somewhat offset by his habit of drawing on a great pad of paper at the rear of the platform, illustrating almost every thought. In this drawing he uses a fistful of colored chalks, and by the time he has covered one of the great sheets of paper behind him, the pattern is interesting even if one does not know just what it is all about.

Saturday, October 26.—Sir Giles Gilbert Scott, who is now president of the R. I. B. A., put a great deal of significance into a very few words when he spoke some months ago before a convention of British architects at Glasgow:

"In architecture there are usually two main schools of thought, due to the importance attached by different individuals to two qualities latent in every human being, the intellect and the emotions. . . . The extremists, being more vocal, form around them schools of thought which I might broadly dub 'The Thinkers' and 'The Feelers'; 'The Thinkers' being those who favor the scientific, logical and practical approach to architecture; and 'The Feelers,' those who are guided more by their instinctive feelings, emotions, and reactions. . . . The old battle of the styles has existed with us ever since a live tradition in architecture ceased to exist—as for instance, the Classic versus the Gothic struggle of my grandfather's time. . . . The present controversy of Modernism versus Traditionalism is the same issue under other names. . . .

"Of course, neither school is entirely right nor entirely wrong. The scientific approach to architecture, in so far as it concerns planning, construction and materials, is essential, but this is not enough; man, being what he is, demands something more than the scientific satisfaction of his material requirements, nor is the purely artistic approach to architecture enough, but it is just in deciding where and how this quality that appeals to man's feelings, call it art or what you will, can be brought in that we find ourselves in difficulties. . . .

"One wonders what escape there is from the apparent *cul-de-sac* into which modernism seems to have found itself. . . . The change that comes from new methods of construction and materials will be too slow to keep pace with the demand for relief from monotony; is it possible that we shall again see the introduction of useless ornamental shapes and decoration eventually developing into a Baroque Functionalism?"

* * *

Thursday, October 31.—Langdon Post. Tenement House Commissioner and a member of the New York City Housing Authority, painted a sad picture today at The Architectural League luncheon on the subject of housing. We have been talking for many months now about the great things we hoped and expected to do along the lines of replacing some of New York's unfit dwellings, and the net result is very far below our expectations. Of course, the fundamental trouble has been that housing was seized upon as an emergency measure. It is not that. It is a problem for long-range planning and gradual, rather than spasmodic, accomplishment. Perhaps our disappointment over the meagerness of the results to date may be tempered by the knowledge that we have at least learned a fundamental principle.

NUMBER 110 IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF SHUTTERS & BLINDS

Subjects of previous portfolios are listed below at left and right of page

1926
DORMER WINDOWS
SHUTTERS AND BLINDS

1927
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

1931
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS
GARAGE DOORS

1931—*Continued*
MAIL-CHUTE BOXES
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS
PARAPETS

1932
RADIATOR ENCLOSURES
INTERIOR CLOCKS
OUTSIDE STAIRWAYS
LEADED GLASS MEDALLIONS
EXTERIOR DOORS OF WOOD
METAL FENCES
HANGING SIGNS
WOOD CEILINGS
MARQUISES
WALL SHEATHING
FRENCH STONEWORK
OVER-MANTEL TREATMENTS

1933
BANK SCREENS
INTERIOR DOORS
METAL STAIR RAILINGS
VERANDAS
THE EAGLE IN SCULPTURE
EAVES RETURNS ON MASONRY GABLES
EXTERIOR LETTERING
ENTRANCE DRIVEWAYS
CORBELS
PEW ENDS
GOTHIC NICHES
CURTAIN TREATMENT AT WINDOWS

1934
EXTERIOR PLASTERWORK
CHURCH DOORS
FOUNTAINS
MODERN ORNAMENT
RUSTICATION
ORGAN CASES
GARDEN FURNITURE
WINDOW HEADS, EXTERIOR
SPIRES
BUSINESS BUILDING LOBBIES
ROOF TRUSSES
MODERN LIGHTING FIXTURES

1935
CIRCULAR WINDOWS, GOTHIC AND ROMANESQUE
TILE ROOFS
MOLDED BRICK
DORMER WINDOWS
ENTRANCE SEATS
OVERDOORS, INTERIOR
BRICK CORNICES
SIGNS
CHIMNEY OFFSETS
WINDOW HEADS, EXTERIOR, ARCHED
UNUSUAL BRICKWORK

Below are the subjects of forthcoming Portfolios

Fireplaces
(MEDITERRANEAN TYPES)
JANUARY

Pediments
FEBRUARY

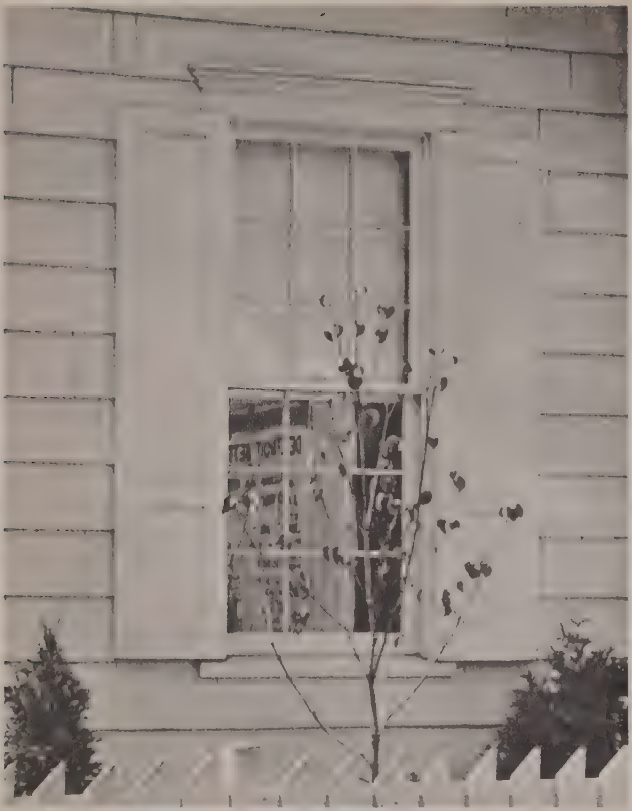
Balcony Railings
(INTERIOR)
MARCH

Gothic Buttresses
APRIL

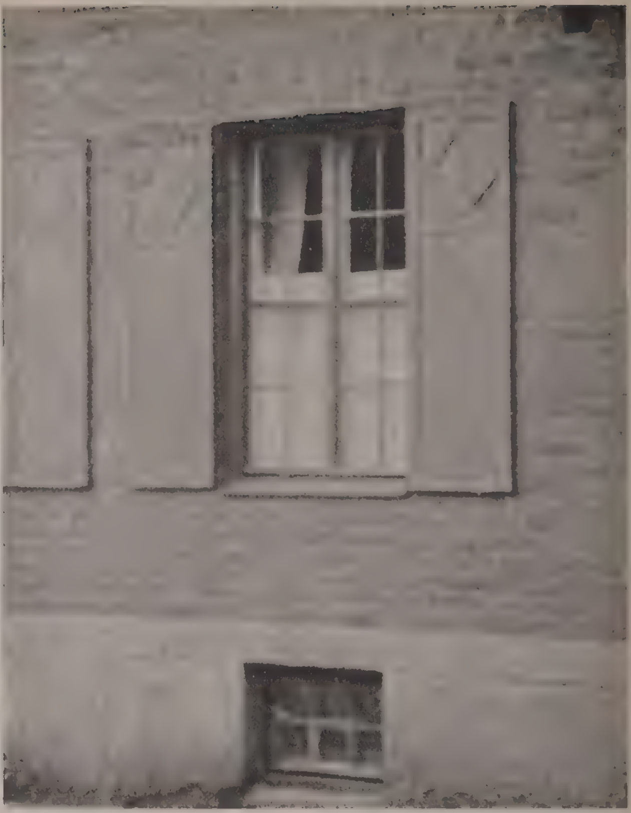
Corner Windows
MAY

Self-supporting Stairways
JUNE

Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication date.

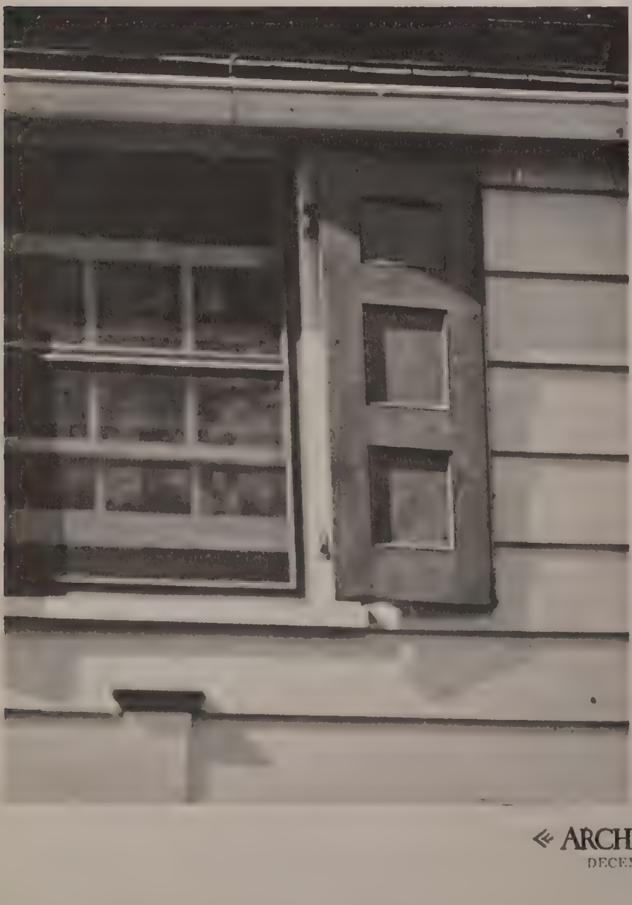


Detroit's modernized demonstration house
D. Allen Wright

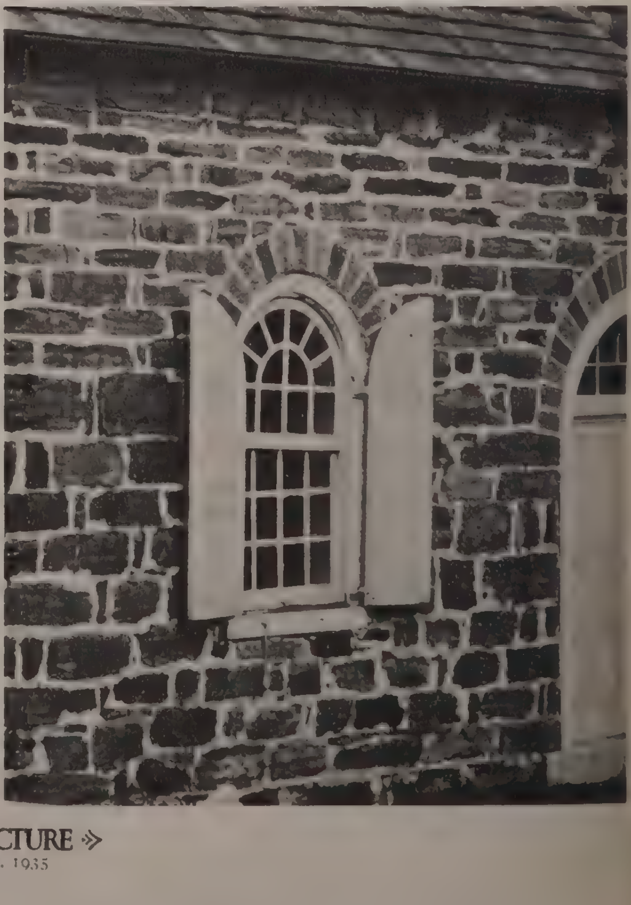


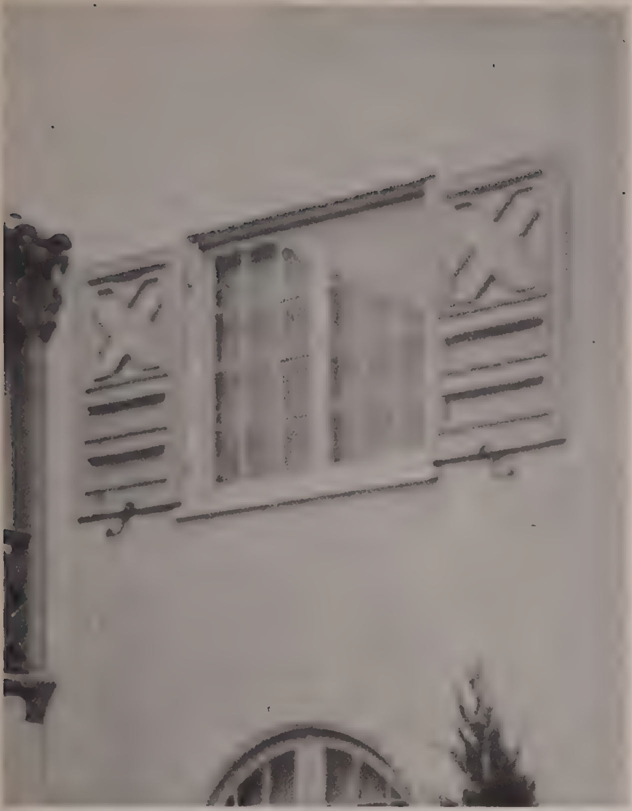
Modern work in
Stockholm, Sweden

Living quarters over a garage

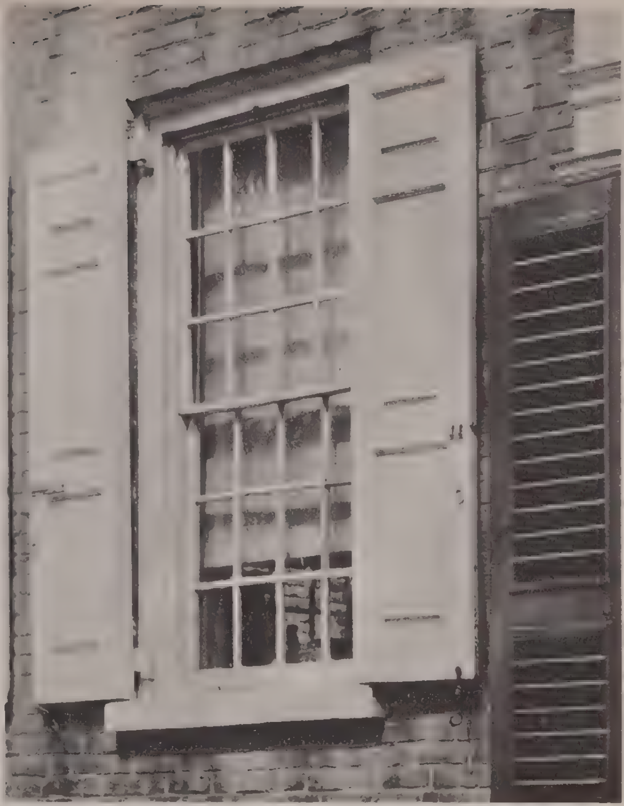


Old Norristown (Pa.) Presbyterian Church (1710)



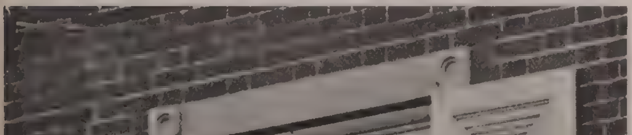


House just outside of San Francisco
Masten & Hurd

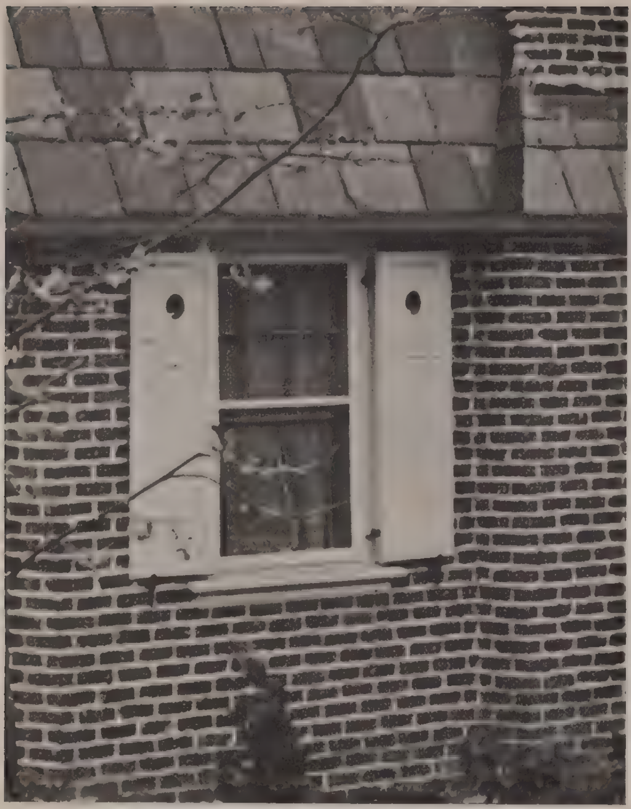


Old house at New Castle, Del.

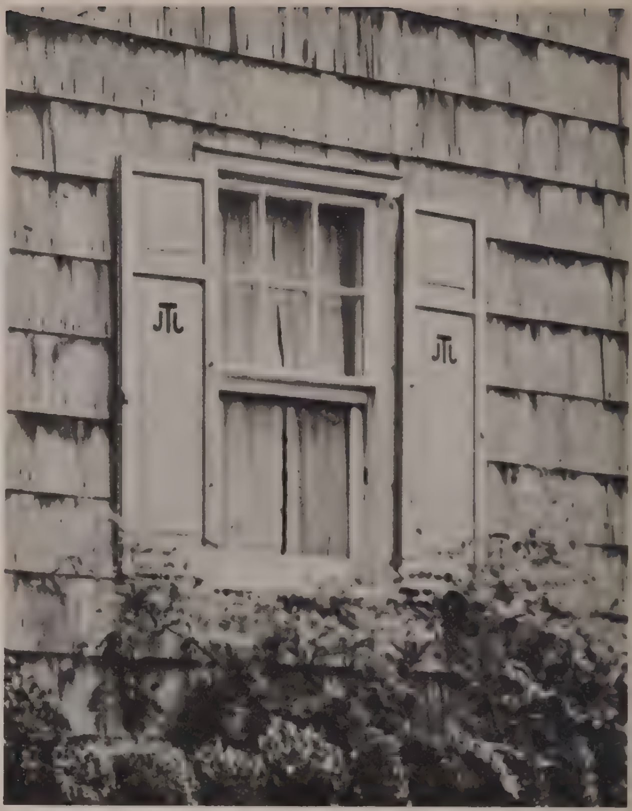
Unusual panelling, New Castle, Del.



House at Brookville, N. Y.
James W. O'Connor

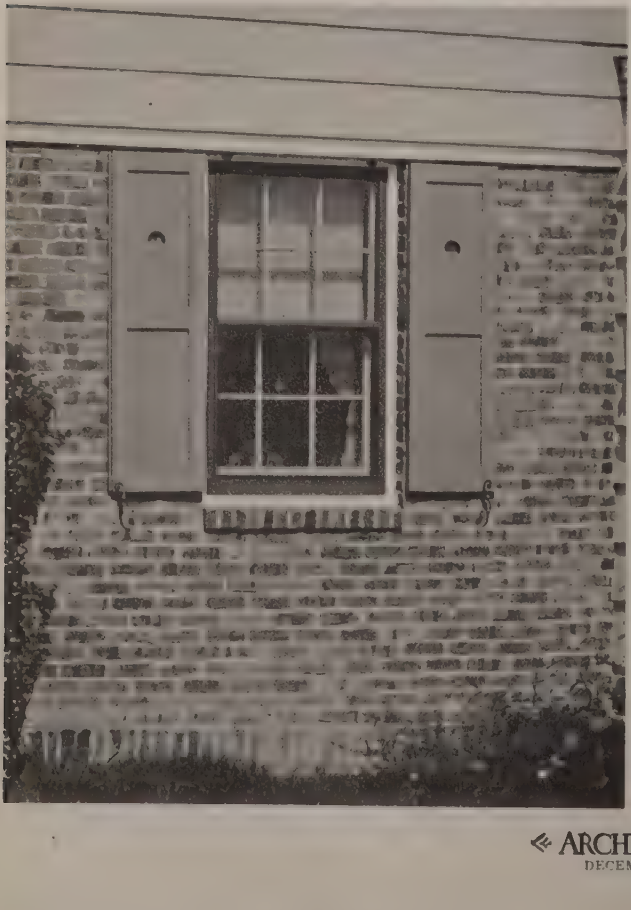


House at Englewood, N. J.
Caretto & Forster

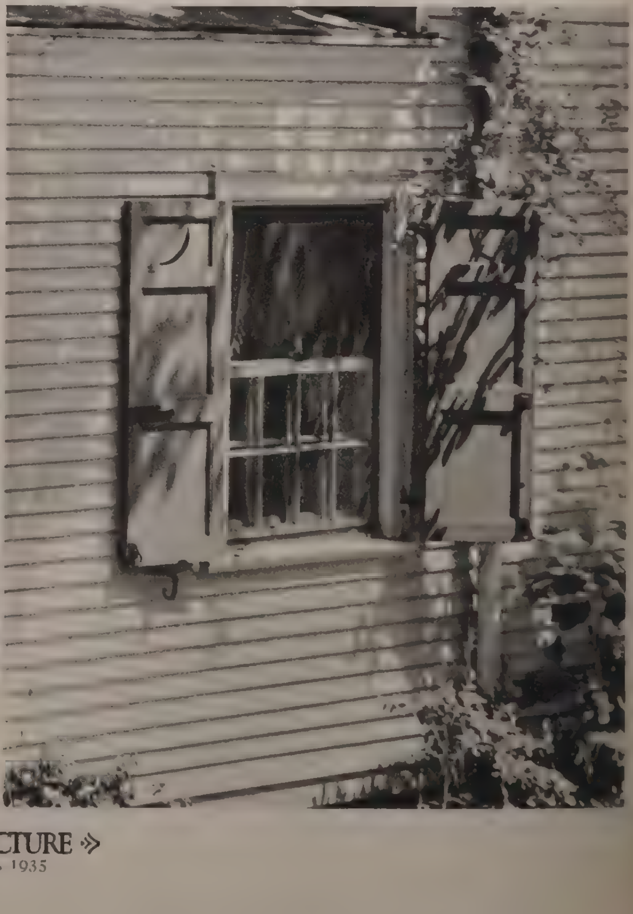


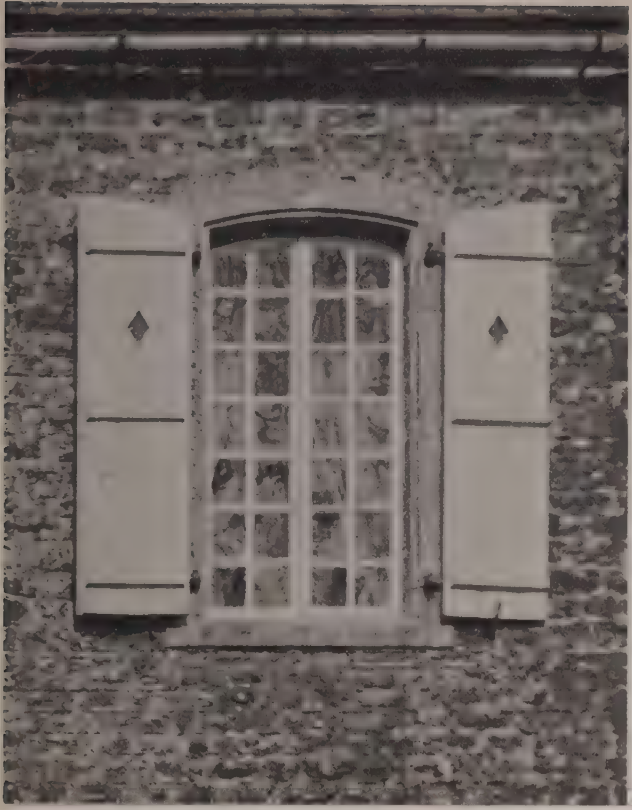
House at Mill Neck, N. Y.
William Lawrence Bottomley

House at Radburn, N. J.
Clarence S. Stein

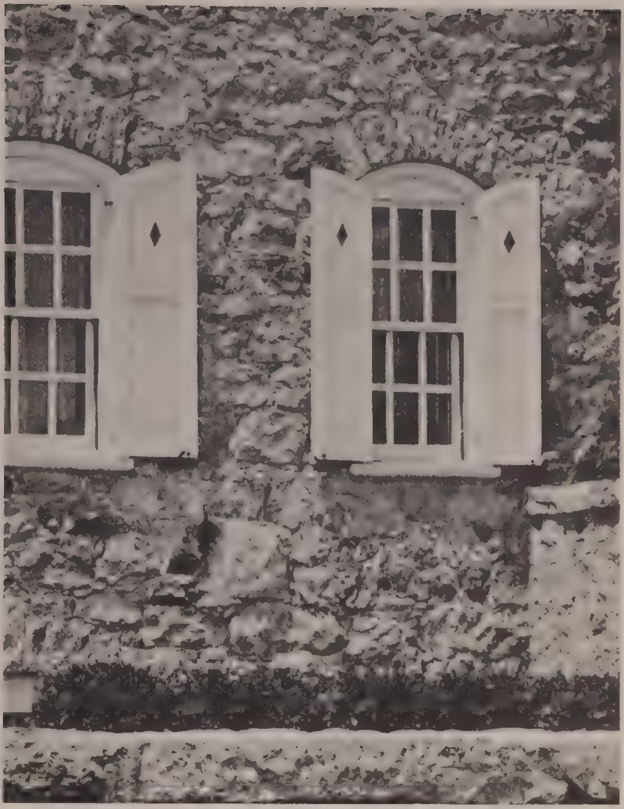


House at Scarsdale, N. Y.
Electus D. Litchfield



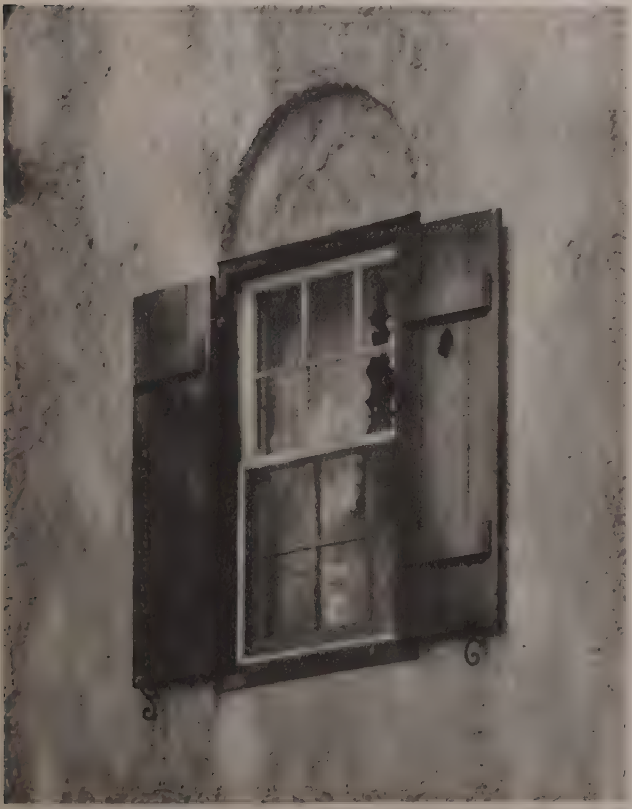


Château d'Odre,
Pas de Calais, France

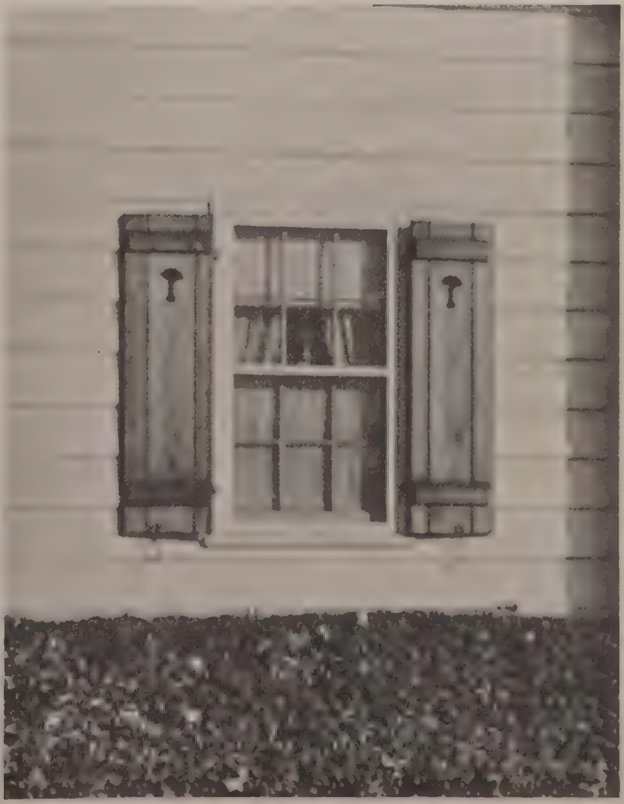


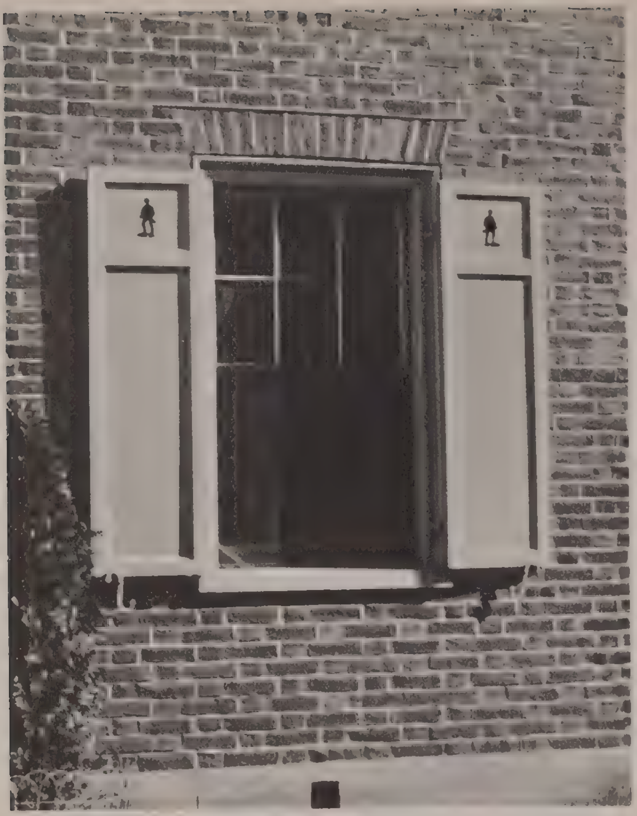
House in Connecticut
Frederick J. Sterner

House at Cincinnati, Ohio
Charles F. Cellarius

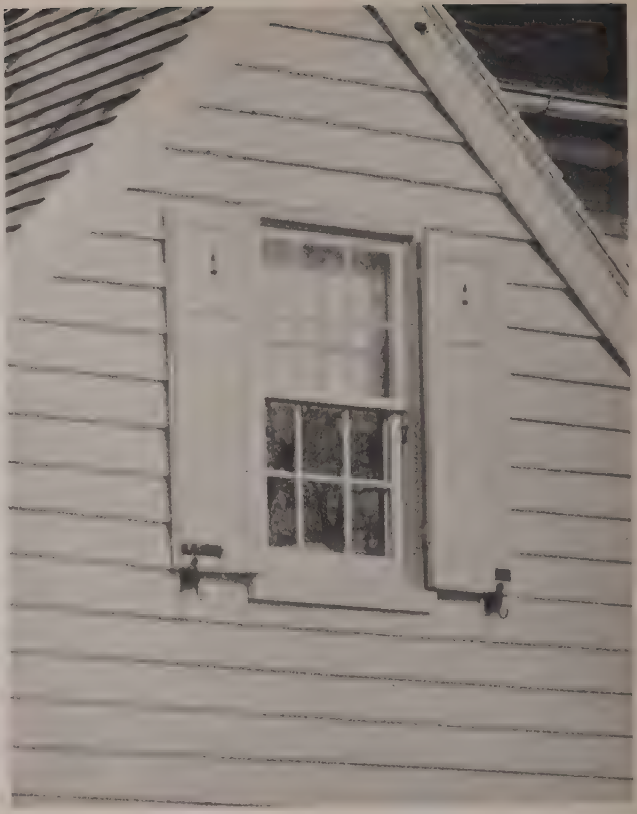


House at Pleasantville, N. J.
James Renwick Thomson



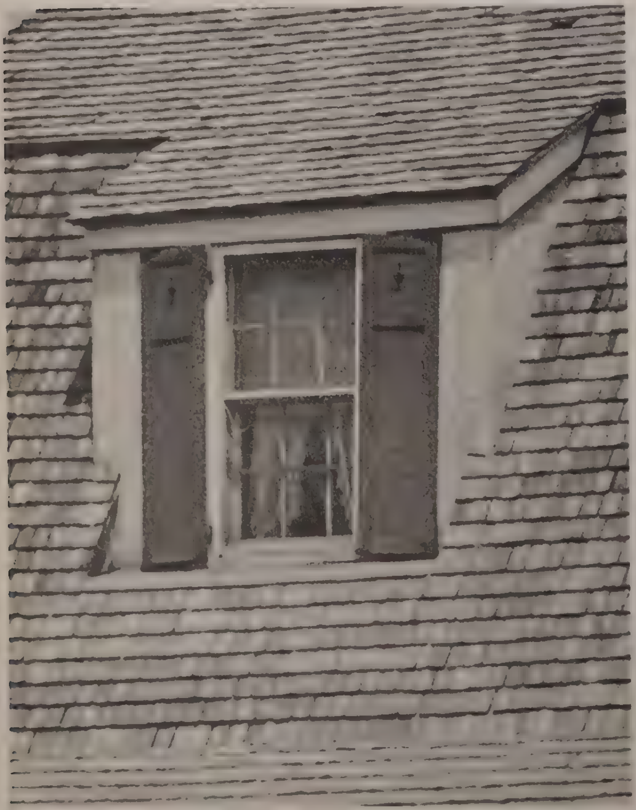


Bank at Lexington, Mass.
Thomas M. James Company

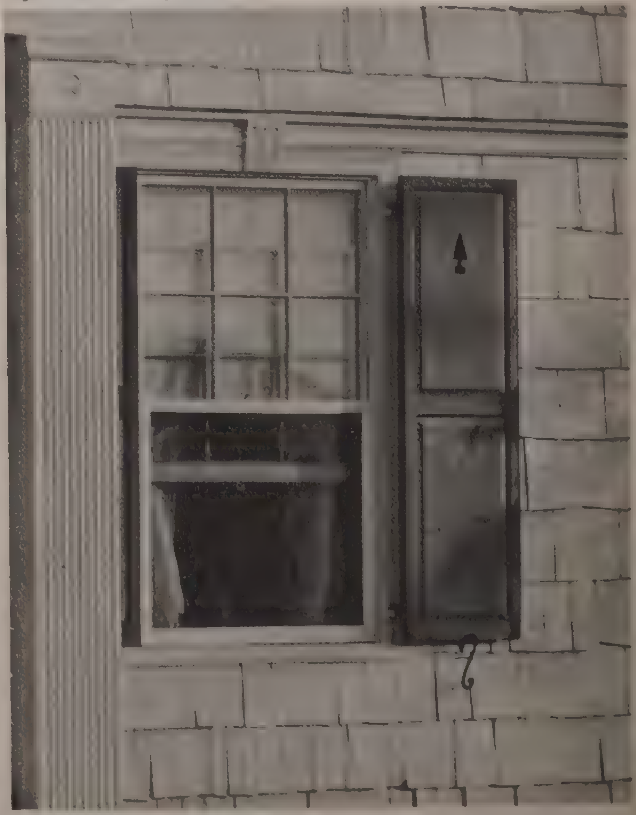


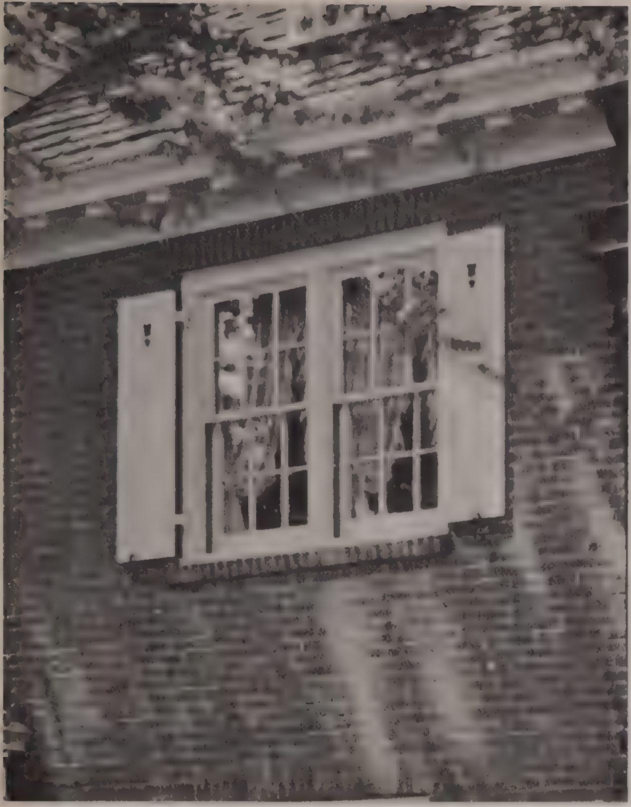
House at Easton, Md.
Henry Hopkins

House at Kingsport, Tenn.
Clinton Mackenzie

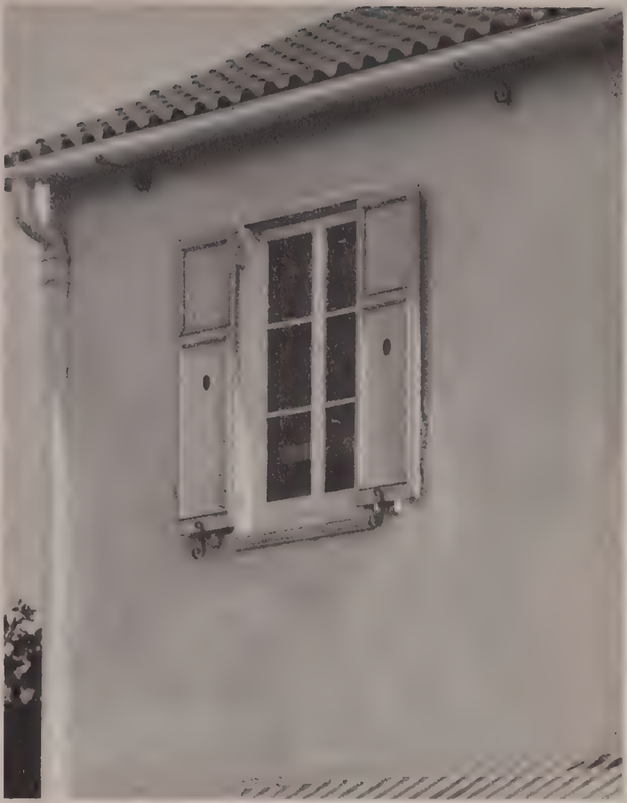


House at East Hampton, N. Y.
Aymar Embury II



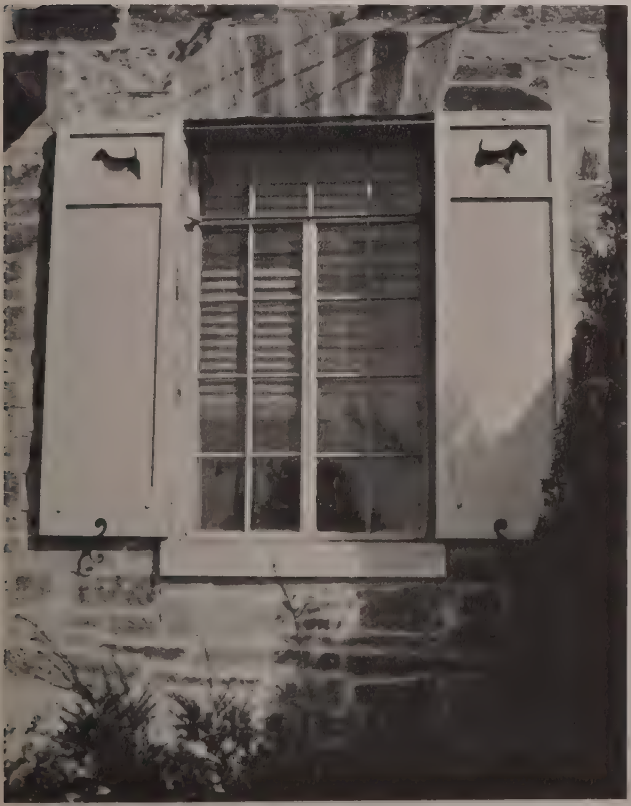


House at Cincinnati, Ohio
Charles F. Cellarius

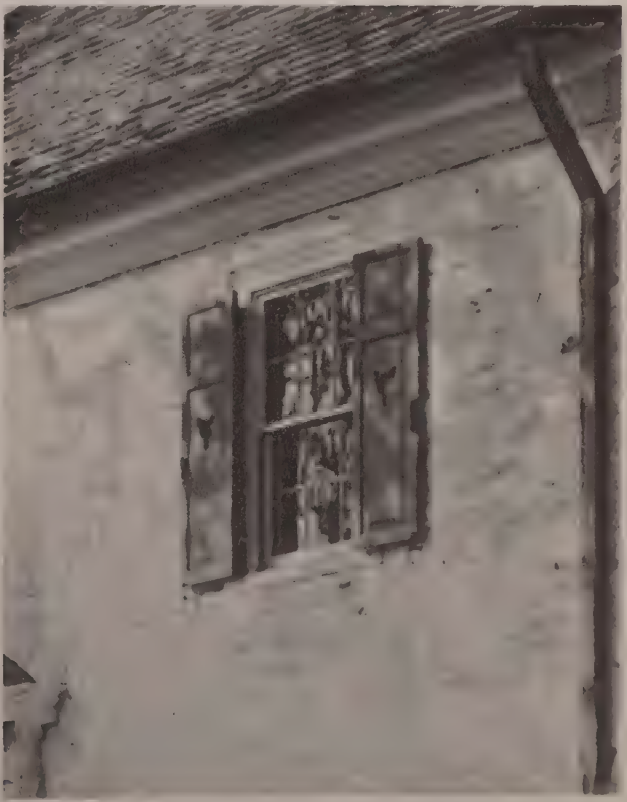


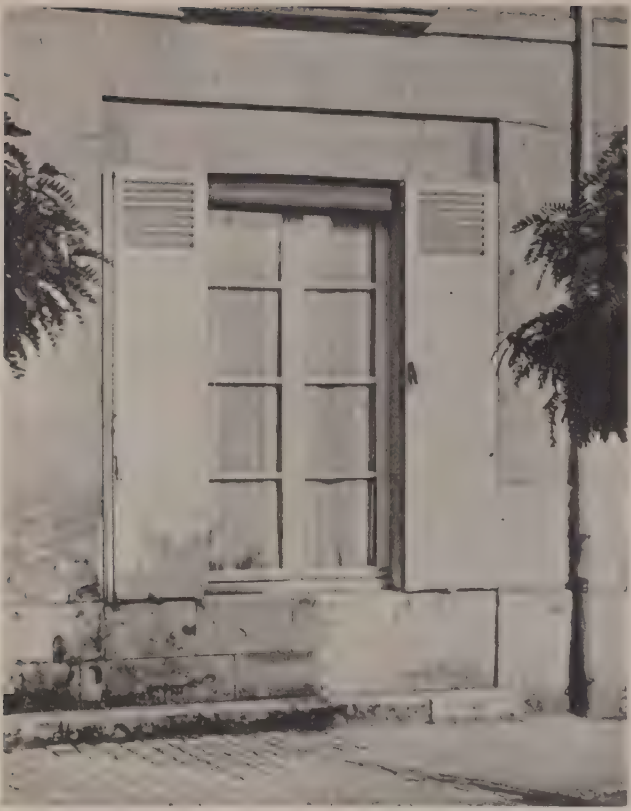
House at San Antonio, Tex.
Adams & Adams

Veterinary Hospital, Washington, D. C.
E. Burton Corning

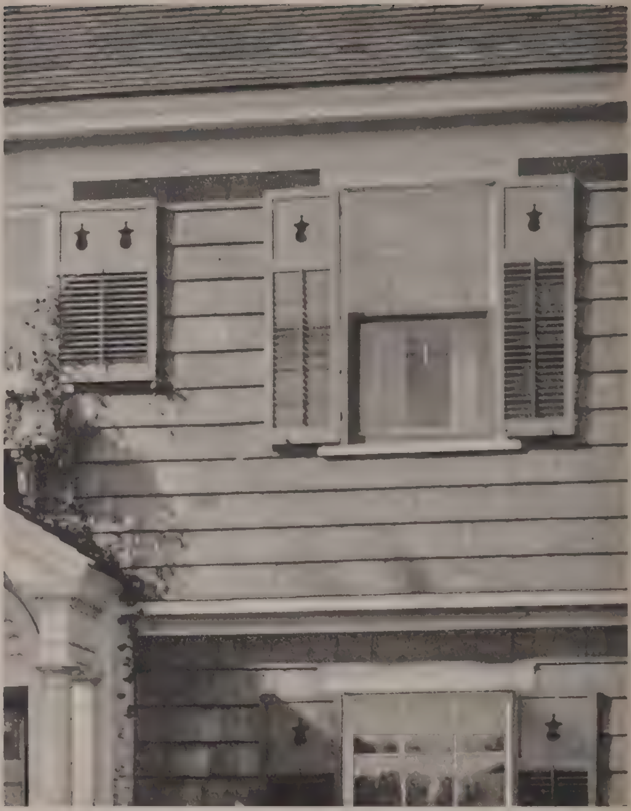


House at Warrenton, Va.
Bottomley, Wagner & White



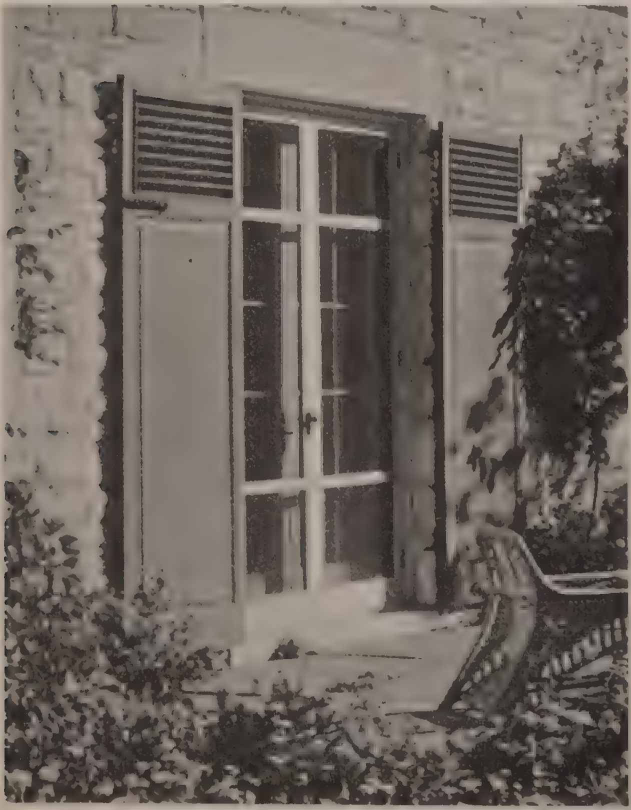


House at Orléans.
France

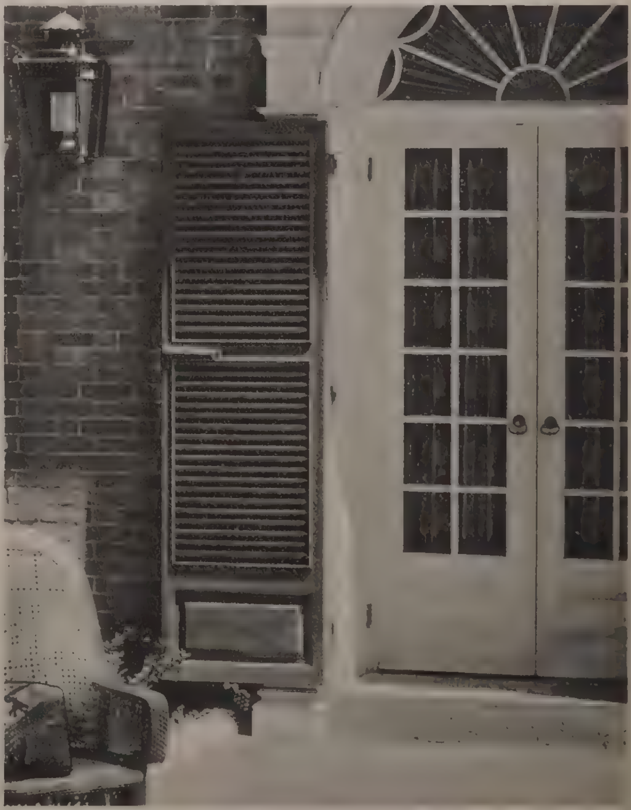


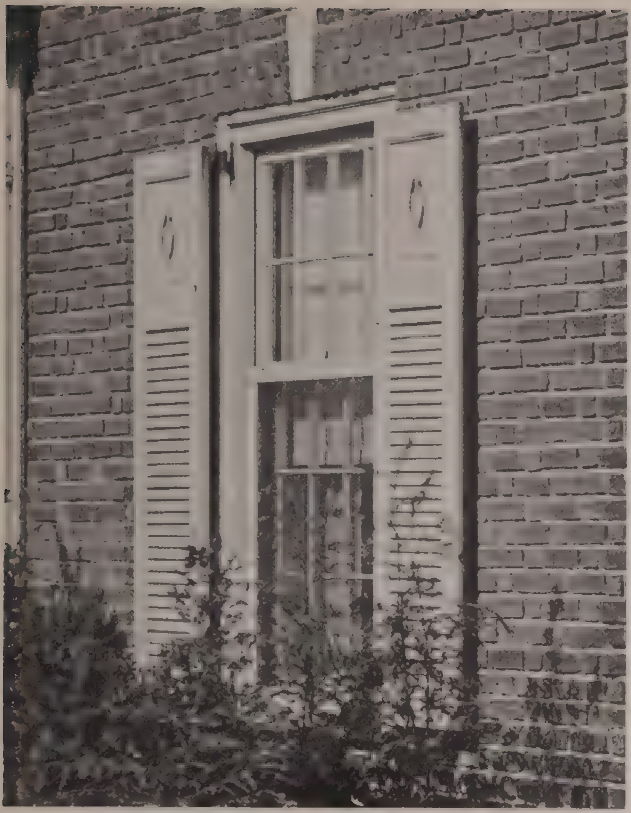
House at Springfield, Mass.
Clifton C. West

House at Morristown, N. J.
Greville Rickard

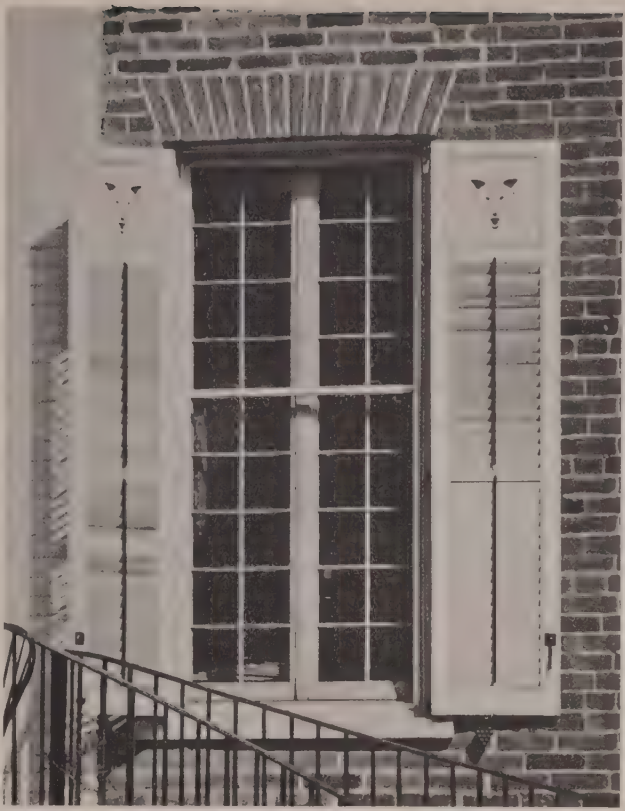


House at Pelham, N. Y.
Pliny Rogers



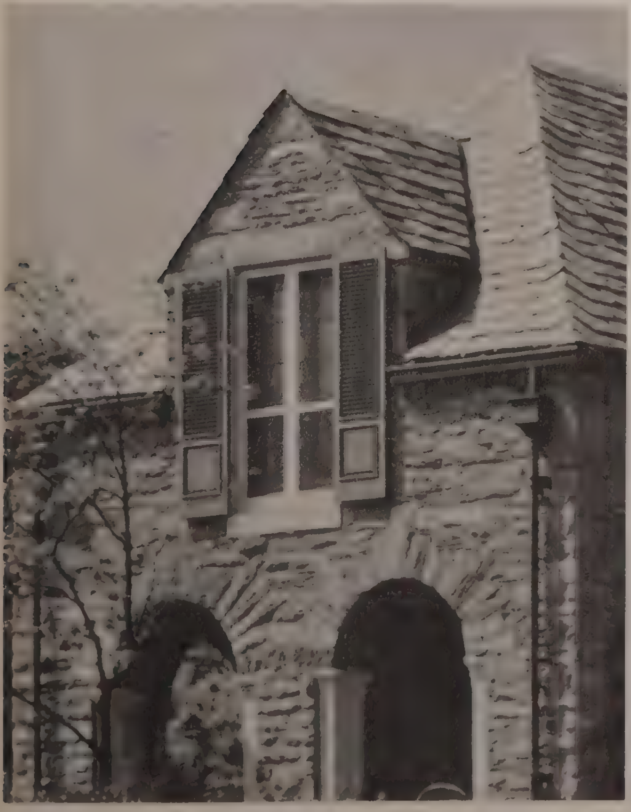


House at Fieldston, N. Y.
Dwight James Baum

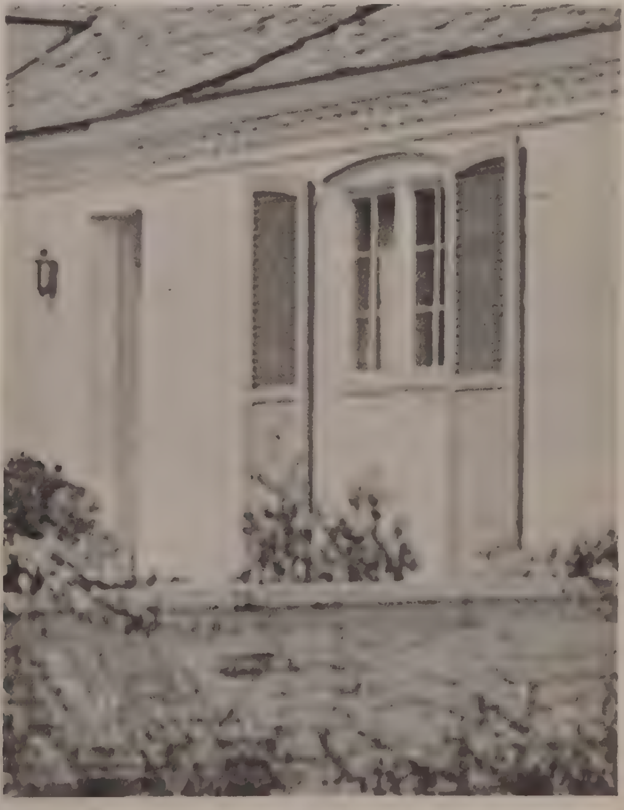


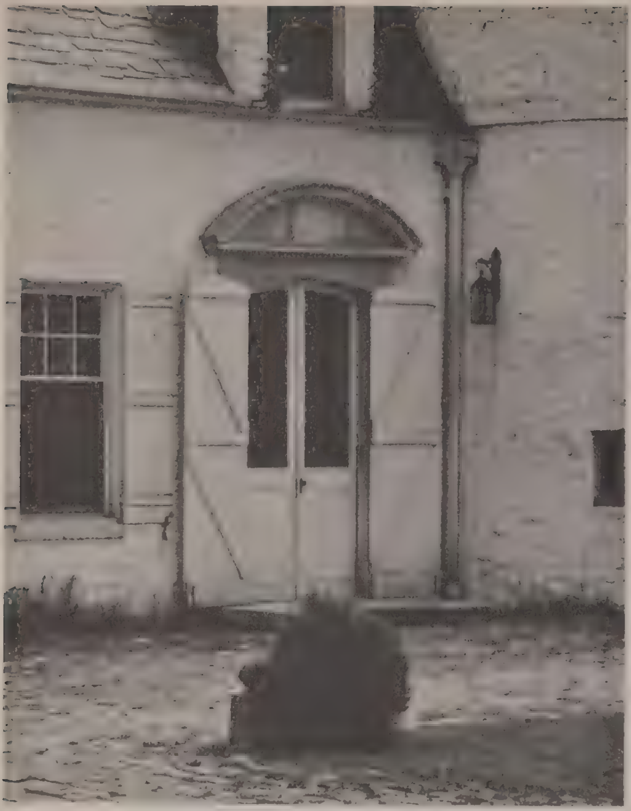
House at Middleburg, Va.
Peabody, Wilson & Brown

House at Wynnewood, Pa.
Henry D. Dagit & Sons

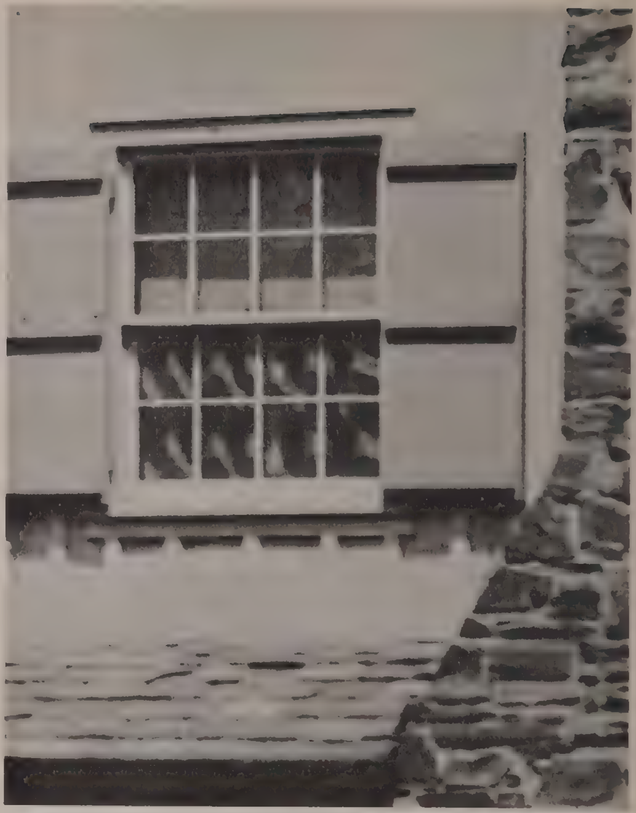


House at Los Angeles, Calif.
Ralph C. Flewelling





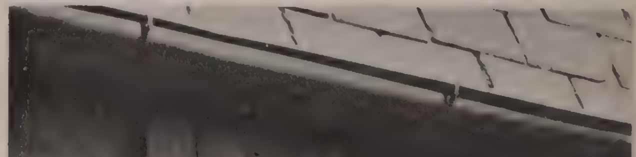
House at Atlanta, Ga.
Hentz, Adler & Shutze

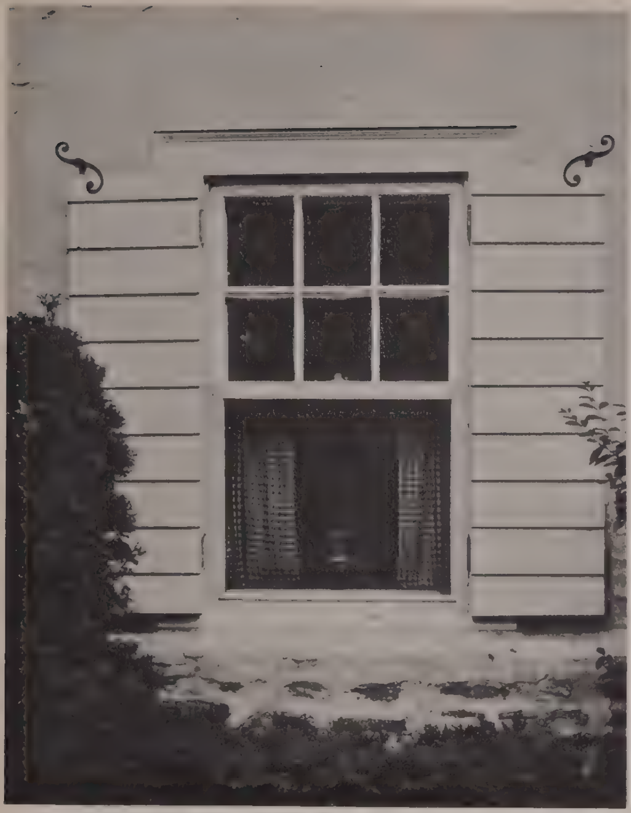


House at Ithaca, N. Y.
LeRoy P. Burnham

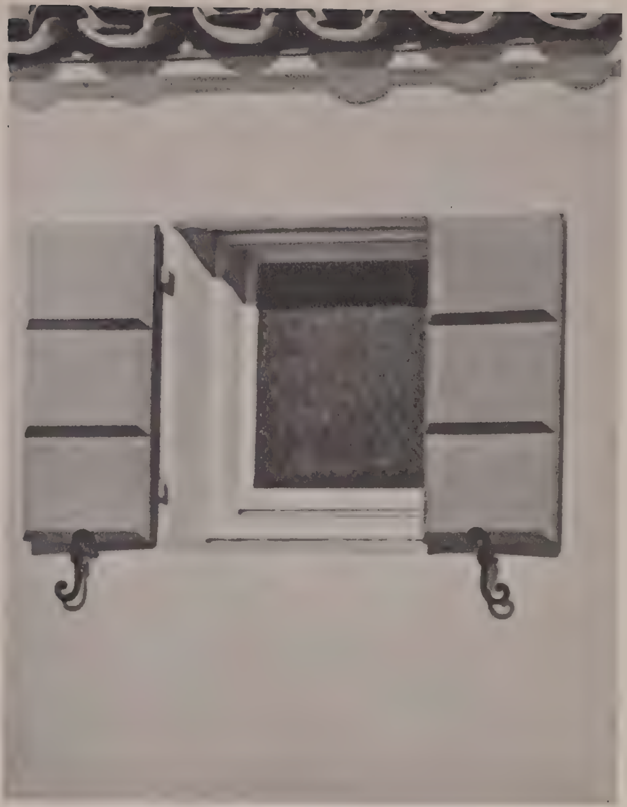
Club house, Lake Sunapee, N. H.
Prentice Sanger

House at Mt. Vernon, N. Y.
Lewis Bowman



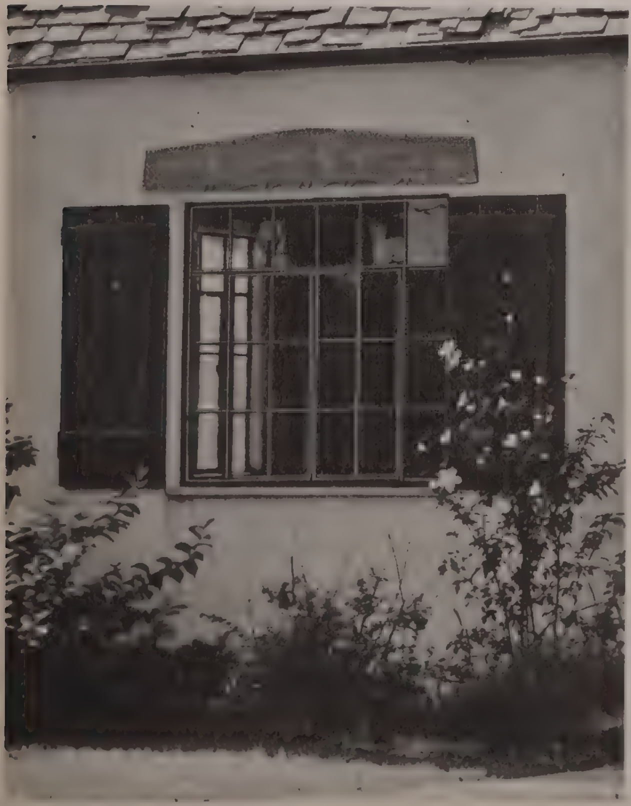


House at Ithaca, N. Y.
LeRoy P. Burnham

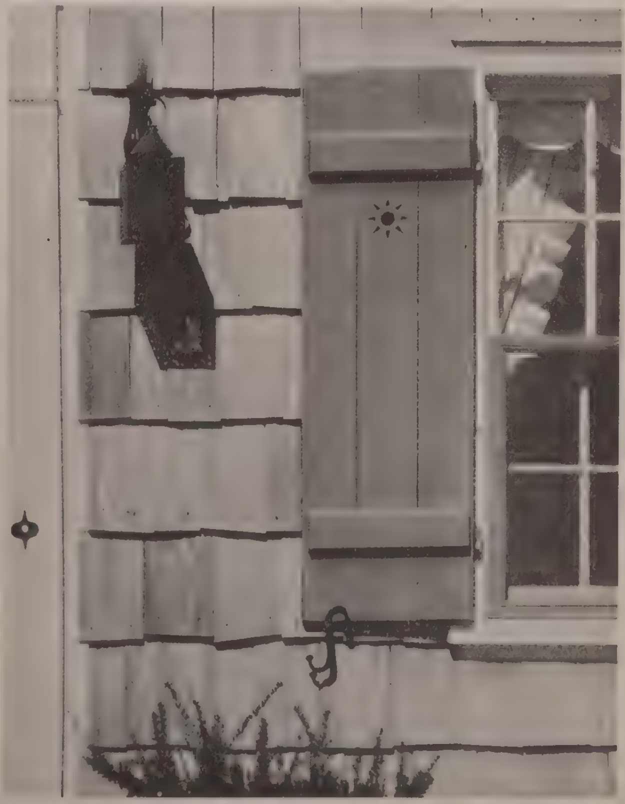


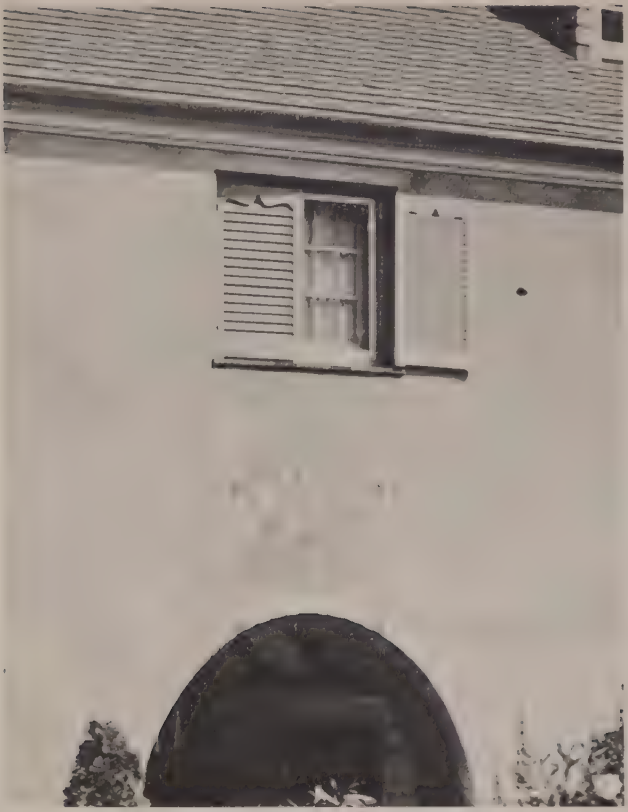
House in Southern California
Gordon B. Kaufmann

House at Scarsdale, N. Y.
Westchester Little Estates, Inc.

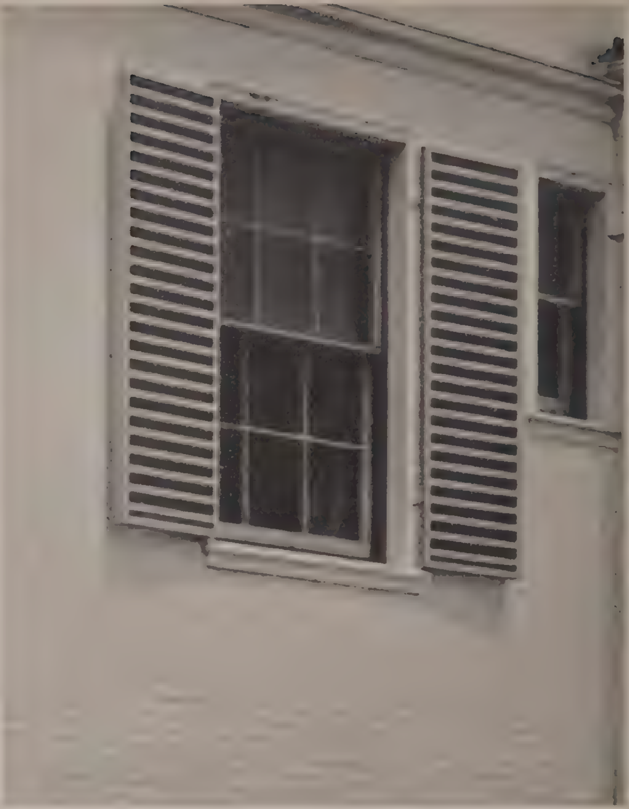


House at Needham, Mass.
Charles S. Keefe



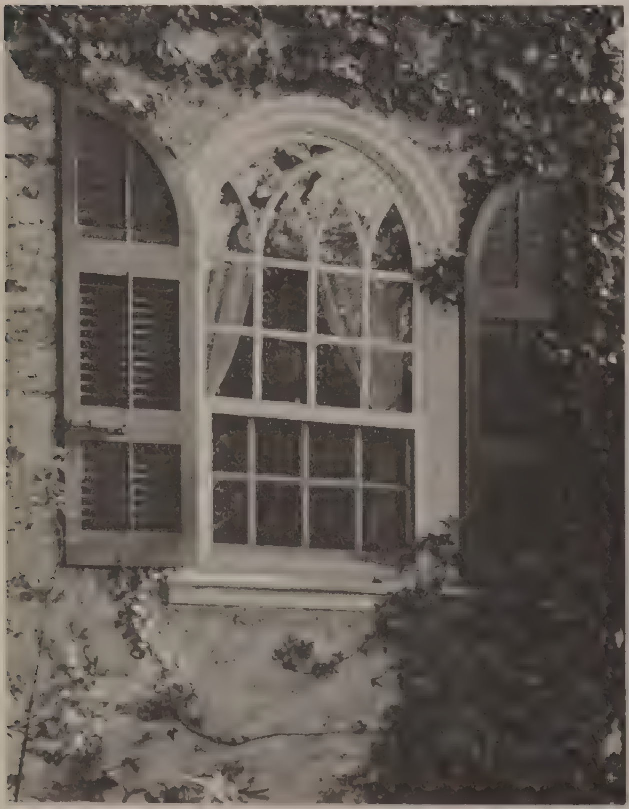


House at Lake Geneva, Wis.
Howard Shaw

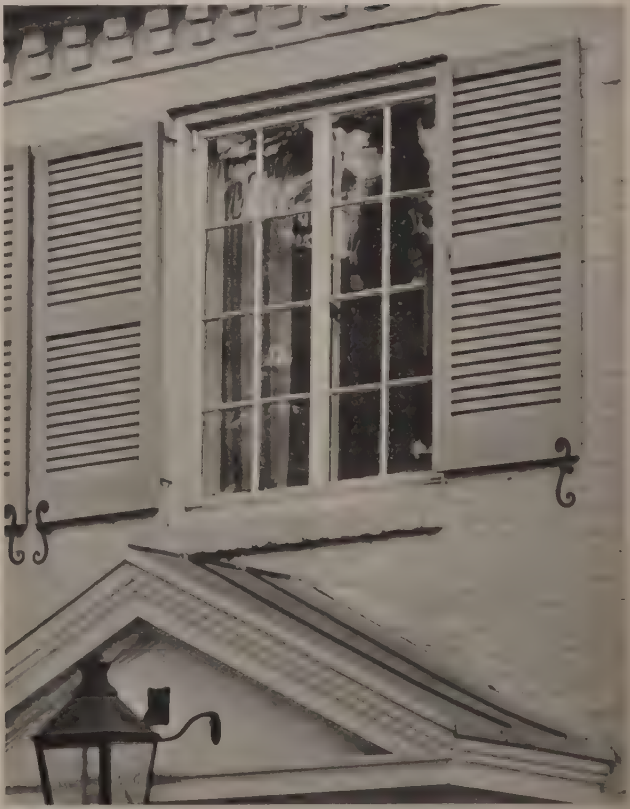


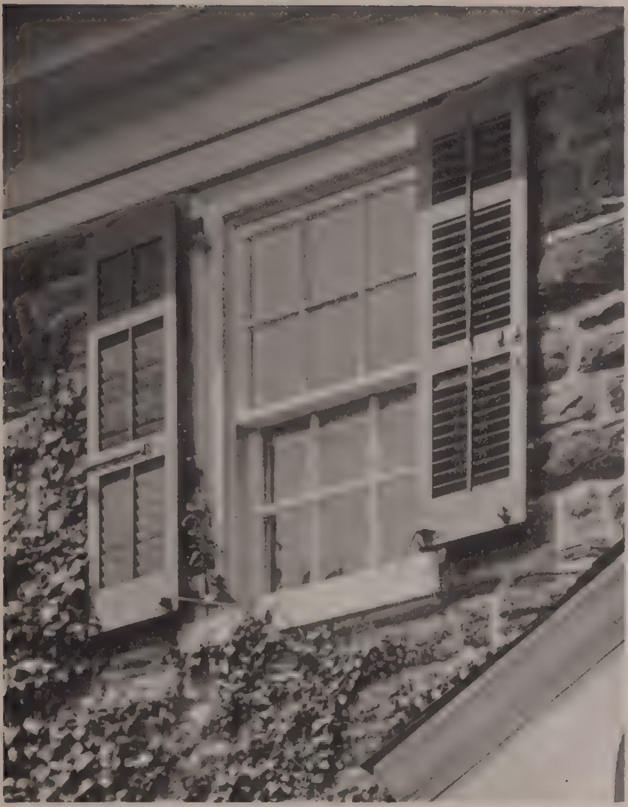
House at West Hartford, Conn.
John M. Bell

House at Oreland, Pa.
Tilden, Register & Pepper

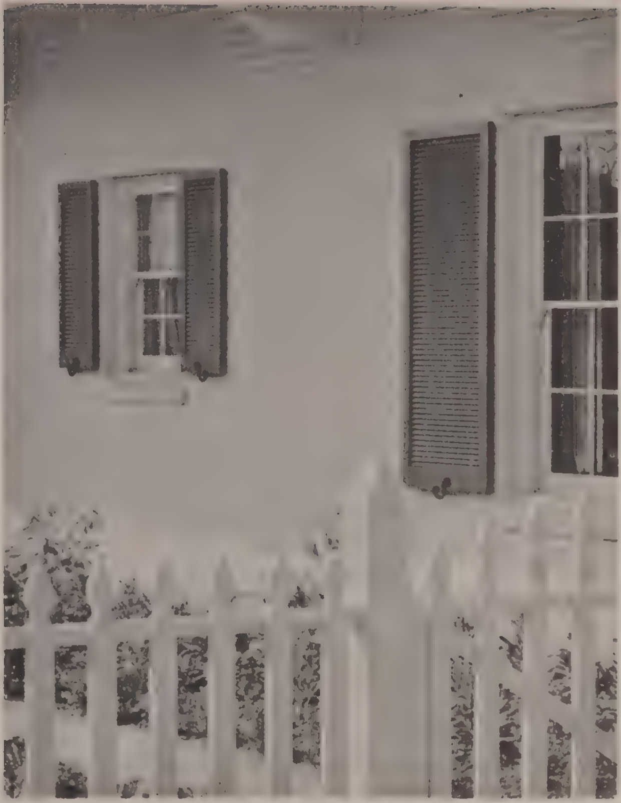


House at Summit, N. J.
Clark & Arms



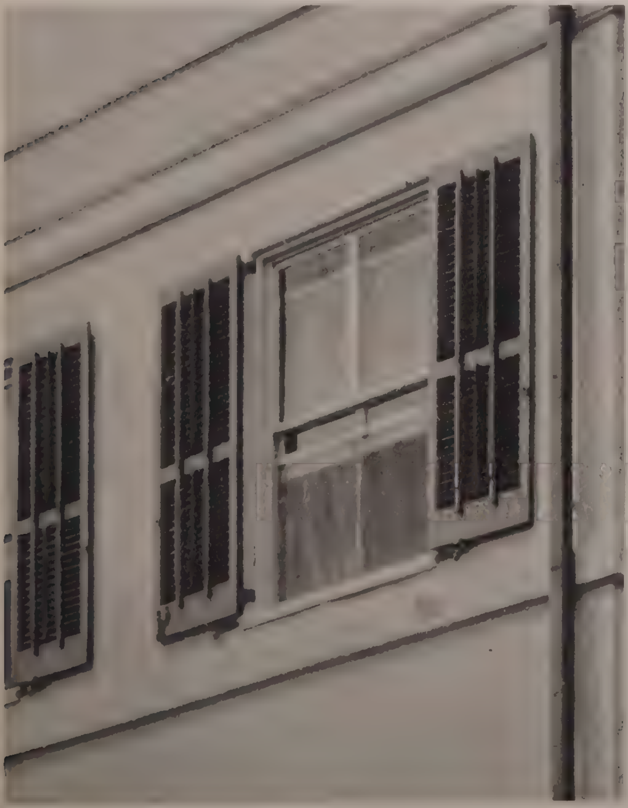


House at Chestnut Hill, Pa.
Magaziner & Eberhard

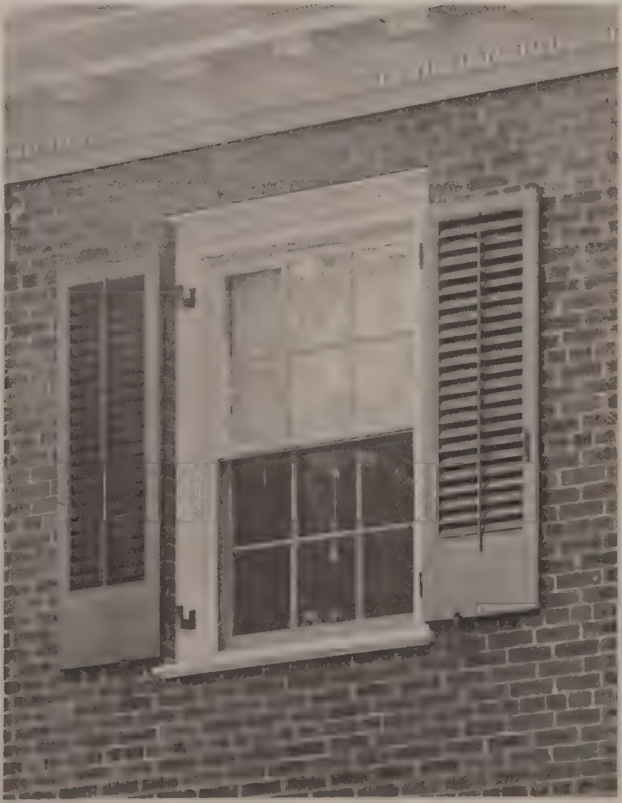


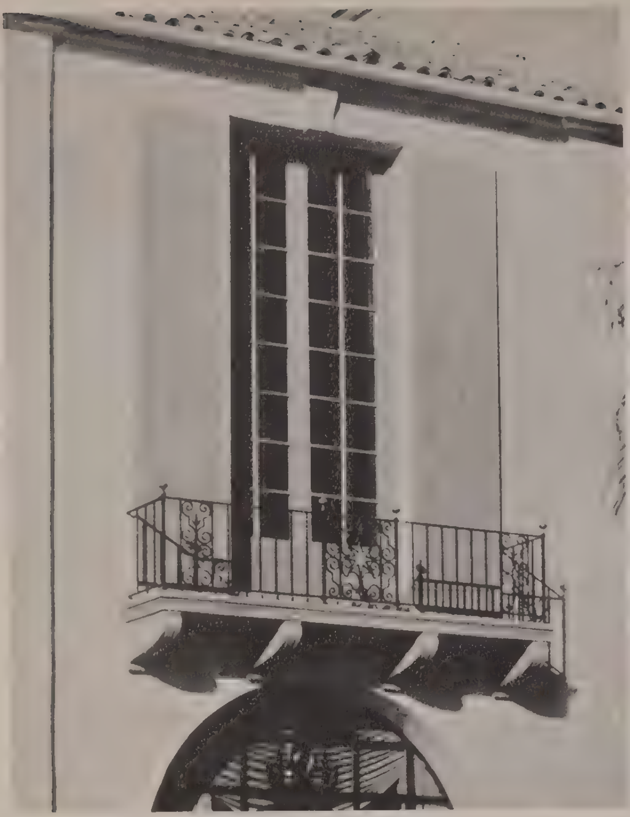
House at Los Angeles, Calif.
Paul R. Williams

House at Bethayres, Pa.
Leigh French, Jr.; Harold D. Eberlein

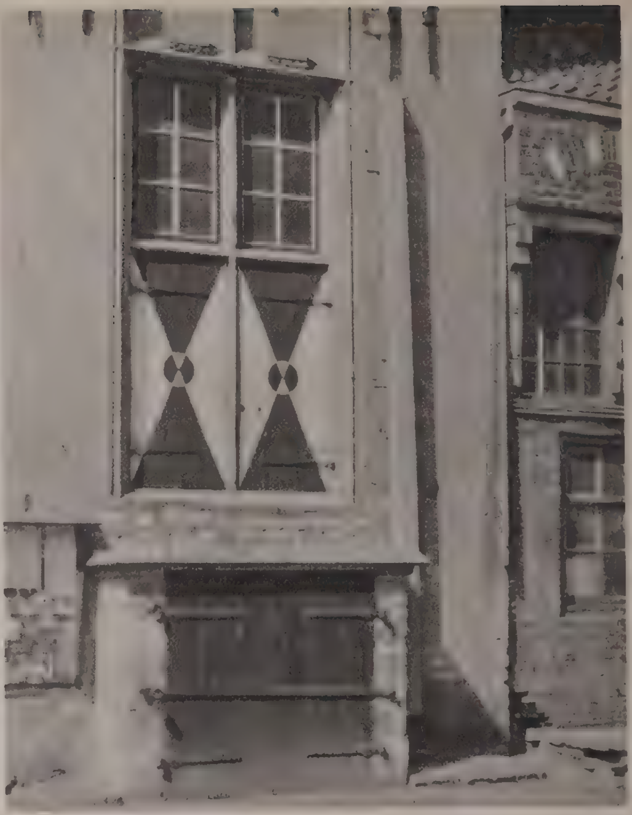


House at Montclair, N. J.
Wallis & Goodwillie



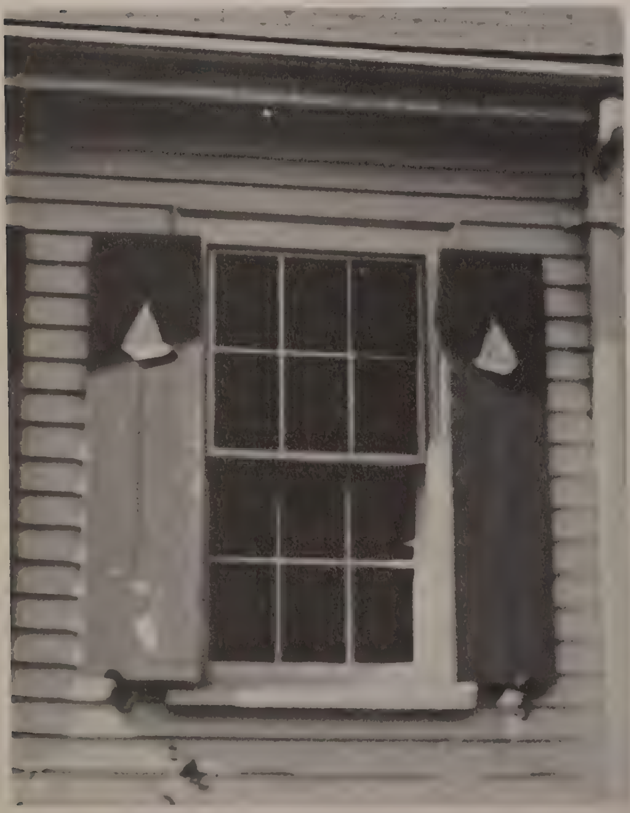


House at Los Angeles, Calif.
Meyer & Holler

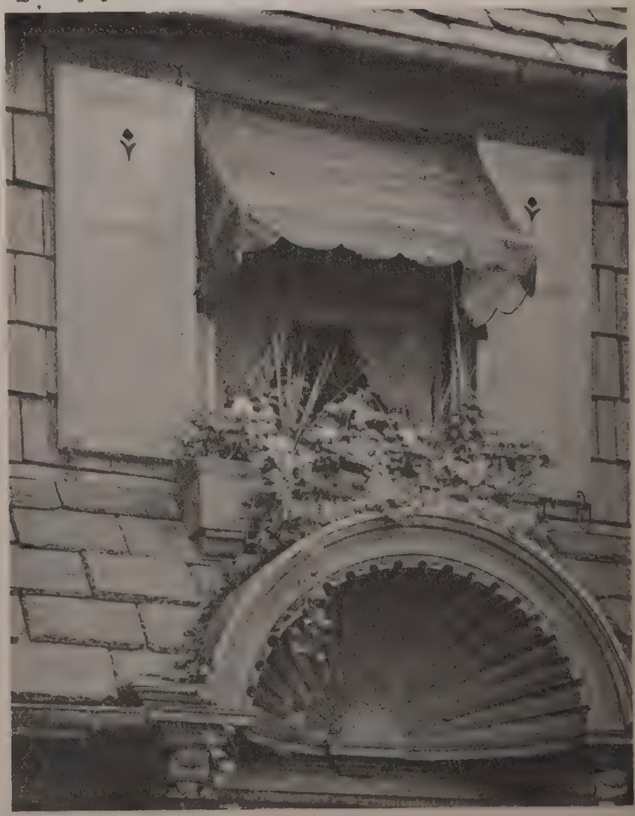


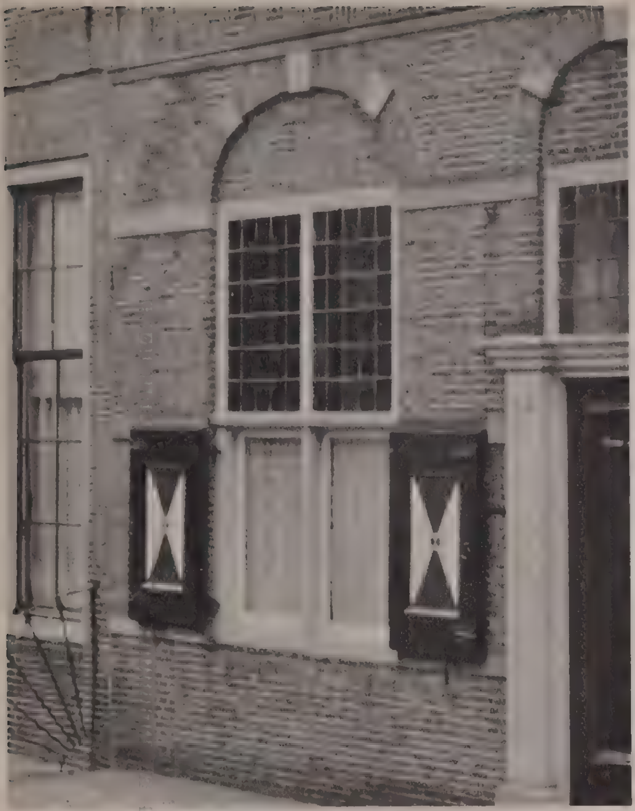
House at Veere,
Holland

House at Winchester, Mass.
Boat design in relief

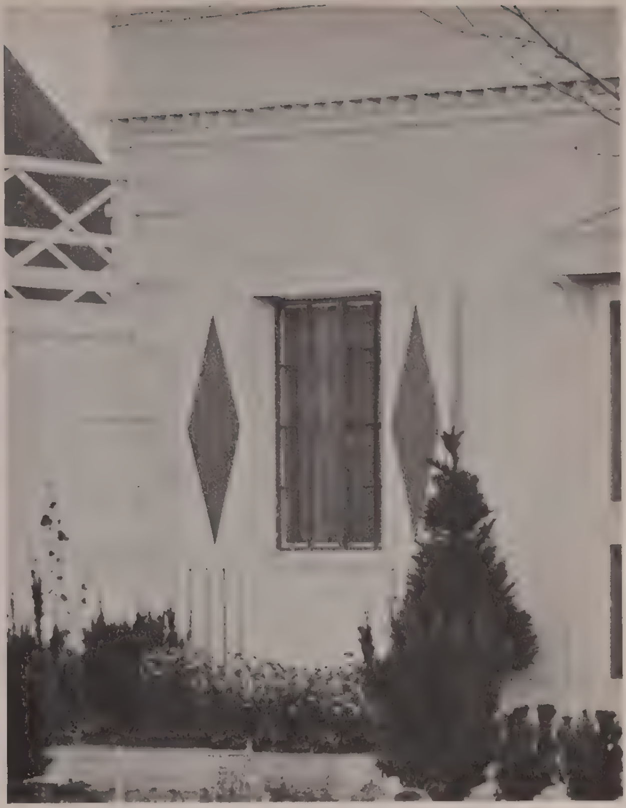


House at East Aurora, N. Y.
Office of John Russell Pope



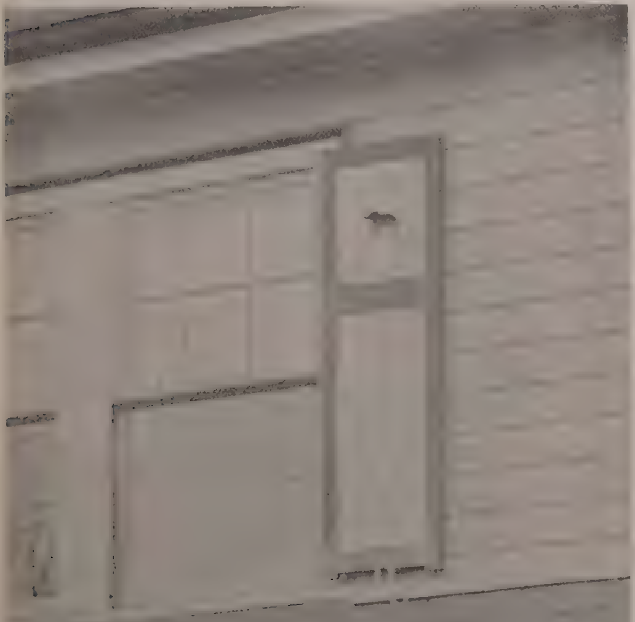


House at Monikendam, Holland

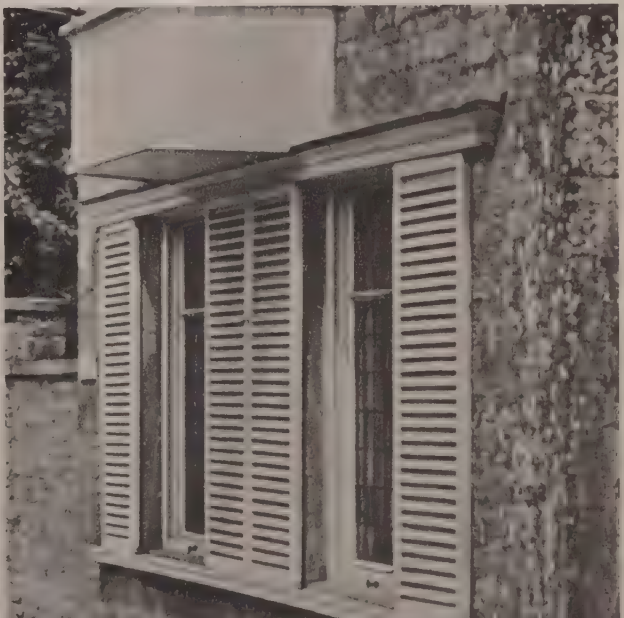


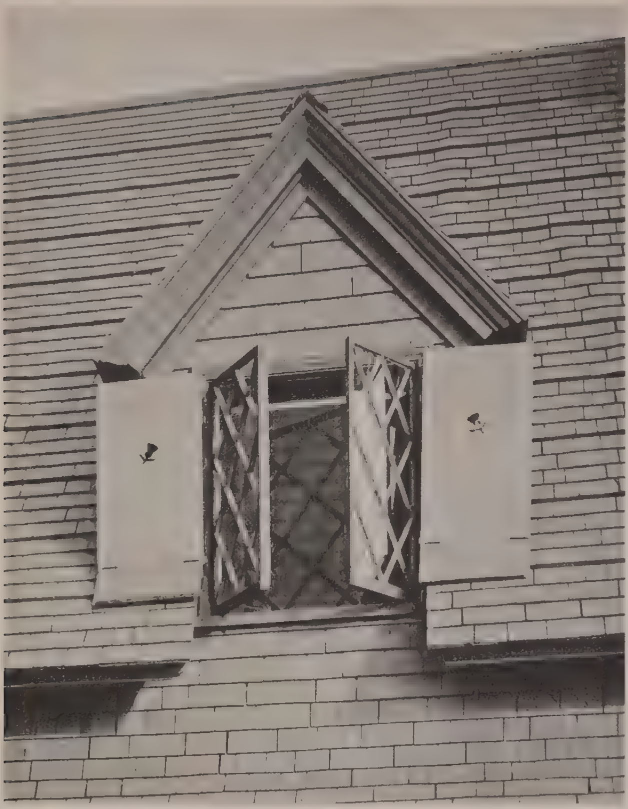
House at Wantagh, N. Y.
Walker & Gillette

House at Watertown, Mass.

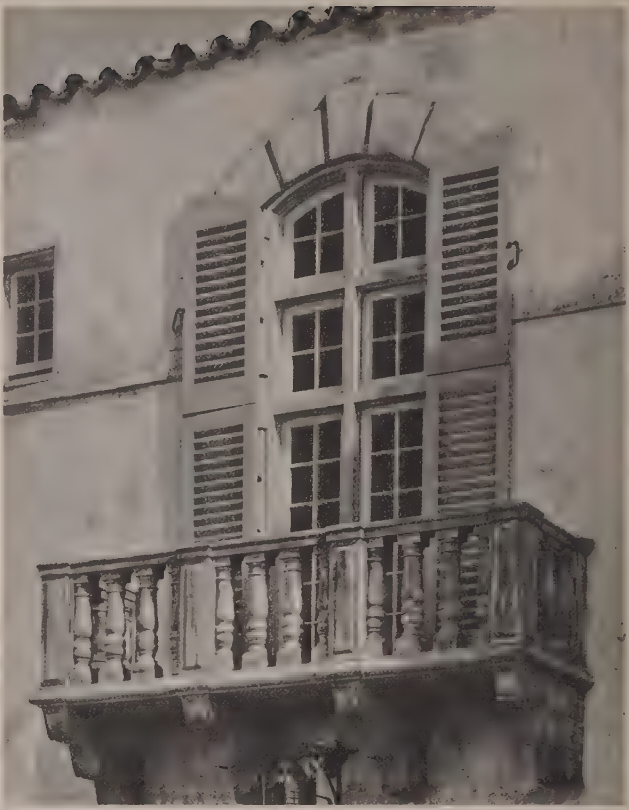


Sliding blinds, Burford, England



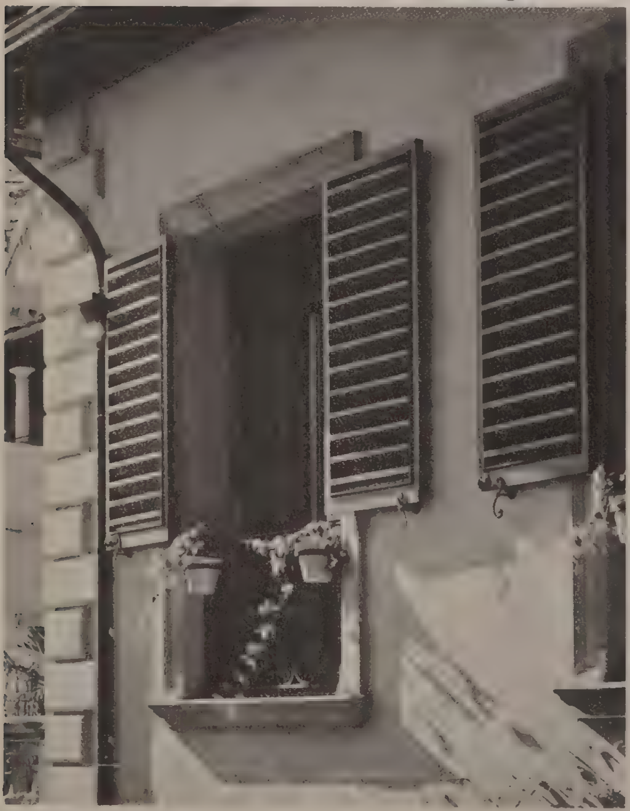


House at Gloucester, Mass.
Henry Sleeper



House at Southampton, N. Y.
LeRoy P. Ward

House at Monticello, Calif.
George Washington Smith



House at Enkhuizen,
Holland